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THESIS

UNITED STATES MARINE CORPS CAREER DESIGNATION BOARD: SIGNIFICANT FACTORS IN PREDICTING SELECTION

by

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March 2014

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The United State Marine Corps (USMC) re-implemented the competitive Career Designation (CD) board starting in FY 2010 to select and retain the most competitive junior officers. From 2010 to 2013, 4,723 out of 6,732 officers were offered CD. Utilizing a Probit model and the dataset of the 6,732 officers, we provide statistical analysis of what factors impact the officer's likelihood of being CD in each of the competitive subcategories of: combat arms, combat service support, aviation-ground, law, and aviation. We find that Reviewing Officer Relative Value Average is the most significant factor for most of the officers, as it increases the marginal probability of being CD by an average of 60 percentage points. Surprisingly, combat deployments were not consistently significant throughout the competitive categories. Finally, we develop an Excel-based interactive CD counseling tool, which provides the probability of the officer being CD, given the officer's individual characteristics.

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UNITED STATES MARINE CORPS CAREER DESIGNATION BOARD: SIGNIFICANT FACTORS IN PREDICTING SELECTION

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ABSTRACT

The United State Marine Corps (USMC) re-implemented the competitive Career Designation (CD) board starting in FY 2010 to select and retain the most competitive junior officers. From 2010 to 2013, 4,723 out of 6,732 officers were offered CD. Utilizing a Probit model and the dataset of the 6,732 officers, we provide statistical analysis of what factors impact the officer's likelihood of being CD in each of the competitive subcategories of: combat arms, combat service support, aviation-ground, law, and aviation. We find that Reviewing Officer Relative Value Average is the most significant factor for most of the officers, as it increases the marginal probability of being CD by an average of 60 percentage points. Surprisingly, combat deployments were not consistently significant throughout the competitive categories. Finally, we develop an Excel-based interactive CD counseling tool, which provides the probability of the officer being CD, given the officer's individual characteristics.

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TABLE OF CONTENTS

LIST OF FIGURES

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LIST OF TABLES

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LIST OF ACRONYMS AND ABBREVIATIONS

AC	active component
AIR-GRN	aviation ground
AL	ammunition lift
AMO	Aviation Maintenance Officer
AVNSUPO	Aviation Supply Officer
CD	Career Designation
CDF	Cumulative Distribution Function
CFT	Combat Fitness Test
CO	Commanding Officer
CSS	Combat Service Support
EAS	End of Active Service
ECP	Enlisted Commissioning Program
ENLPGM	Enlisted Program
FITREP	Fitness Report
FY	fiscal year
GCT	General Classification Test
GRN	ground
HQMC	Headquarters Marine Corps
IRR	Individual Ready Reserve
IST	Inter Service Transfer
LCN	Lineal Control Number
MALS	Marine Aviation Logistics Squadron
MANUF	Maneuver Under Fire
MARADMIN	Marine Administrative Message
MBS	Master Brief Sheet
MCO	Marine Corps Order
MCTFS	Marine Corps Total Force System
MECEP	Marine Enlisted Commissioning Education Program
MLE	maximum likelihood estimation
MMOA	Manpower Management Officer Assignments

MMSB	Manpower Management Support Branch
MOS	Military Occupational Specialty
MPP	Manpower Plans, Programs and Budget
MTC	movement to contact
NDAA	National Defense Authorization Act
NROTC	Naval Reserve Officer Training Corps
OCC	Officer Candidates Course
OMPF	Official Military Personnel File
ORB	Officer Retention Board
PFT	physical fitness test
PII	Personally Identifiable Information
PLC	Platoon Leaders Course
PME	Professional Military Education
PPTS	Percentage Points
RAD	Return to Active Duty
RO	Reviewing Officer
RS	Reporting Senior
TFDW	Total Force Data Warehouse
USMC	United States Marine Corps
USNA	United States Naval Academy
WTI	Weapons and Tactics Instructor
XO	Executive Officer

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Next, I would like to thank Tim Johnson of TFDW and Doreen Marucci of the Performance Evaluation Section at MMSB. Tim was my point of contact at TFDW and was vital to the creation of the majority of the variables in my dataset. Tim was extremely professional throughout the whole process, sometimes working unusual hours to help me not only extract the data, but also do it in a way that would be easiest for me to use. Doreen assisted in extracting the necessary FITREP data, which added significant value to my final dataset. Doreen was also tremendously professional and even prioritized my request over other projects, due to the constricted timeline of my request. Their assistance is greatly appreciated.

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I. INTRODUCTION

A. BACKGROUND

Twice a year, the United States Marine Corps (USMC) holds an Officer Retention Board (ORB). The ORB is comprised of three sub-boards: Career Designation (CD), Inter Service Transfer (IST), and Return to Active Duty (RAD). According to Marine Corps Order (MCO) 1001.45J (2008), the mission of the ORB is to manage the Marine Corps' active component (AC) officer population. Out of the three sub-boards, the CD board is the largest and most significant as it has been responsible for shrinking the active duty force by 2,009 junior officers since the year 2010. This study will examine what factors, if any, are significant in predicting which officers were retained and released.

Large officer attrition rates in the late 1990s and the events of September 11, 2001, led the Marine Corps to a point that it had to grow substantially. The Marine Corps was challenged with the demands of fighting two wars in Iraq and Afghanistan while still maintaining enough numbers to preserve its presence worldwide. To fulfill its commitments, the manpower mission of the Marine Corps became to increase accessions and retain "all fully qualified" current officers on active duty. As the war in Iraq officially came to an end, and the war in Afghanistan began winding down, two issues regarding manpower became evident: The Marine Corps had a surplus of active duty officers and a severe shortage of company grade officers in the Marine Corps reserve. Since the Marine Corps had adopted the "all qualified" method of retention for its junior officers, the only company grade losses were officers who voluntarily departed active duty (Wiler, 2010). For the most part, those officers departing active duty did not want to continue serving in the Marine Corps reserve.

In January 2009, then Marine Corps Commandant General James T. Conway was briefed on the situation and the option of career designation (Wiler, 2010). General Conway decided that a return to competitive career designation would be in the best interest of the Marine Corps for both the active and reserve components. One of the benefits of competitive career designation was that the active component would be

allowed to retain the right number of high-quality officers. Another benefit would be that the reserve component would get its much-needed influx of high-quality officers who still desired to serve the Marine Corps at the reserve level.

Since the year 2010, two boards have been occurring every fiscal year (FY). As the size of the Marine Corps continues to shrink, so do the selection rates on the CD boards (see Table 1).

Table 1. Selection Percentages by Category Since the Return to Competitive Career Designation (after McNeil, 2013)

CD Board	Ground	Combat Service Support	Aviation -Ground	Law	Aviation
FY10 ORB #1	85%	85%	85%	ALL QUALIFIED	ALL QUALIFIED
FY10 ORB #2	80%	80%	80%	ALL QUALIFIED	ALL QUALIFIED
FY11 ORB #1	65%	65%	65%	ALL QUALIFIED	ALL QUALIFIED
FY11 ORB #2	65%	65%	65%	ALL QUALIFIED	ALL QUALIFIED
FY12 ORB #1	60%	60%	60%	85%	95%
FY12 ORB #2	60%	60%	60%	85%	95%
FY13 ORB #1	55%	55%	55%	85%	95%
FY13 ORB #2	55%	55%	55%	85%	95%

B. PROBLEM

Many factors are considered when an officer is screened for career designation. Marine officers are scrutinized in detail during the retention board process by board members who use the Master Brief Sheet (MBS) and the Official Military Personnel File (OMPF) to evaluate officers considered for career designation (MCO 1001.45J, 2008).

Occasionally, the Retention and Release Officer from Manpower Management Officer Assignments (MMOA-3) publishes a CD PowerPoint brief reporting the results from the previous board. The MMOA-3 brief also informs the Marine Corps about the process of the board, selection percentages, and most importantly, common board observations. The Career Counseling Section of Manpower Management Support Branch (MMSB-50) and Company Grade Officers Monitors at MMOA are currently able to provide a Marine officer with regular career counseling based on the officer's OMPF. The CD brief is one of the few supplemental tools available to MMSB-50 and MMOA that provides a more detailed counseling to board-eligible officers. The average physical fitness test (PFT) score for the CD-selected officers is an example of the CD brief provided by MMOA-3. While the brief and its board observations are important, they do not provide counselors and monitors with the ability to counsel board-eligible officers based on multivariate data analysis, which might determine factors that predict selection.

C. PURPOSE

The purpose of this research is to give career counselors, monitors, commanding officers, executive officers, company commanders, and most importantly, career designation eligible officers the ability to isolate a variable and to show the effect it has on career designation. A multivariate data analysis study will determine the predicted probability of selection to career designation while holding all other observable factors constant. Additionally, an excel-based interactive CD counseling model will be created to formulate an officer's current predicted probability for career designation based on the results of previous career designation boards. Such a model may increase the effectiveness of the career counseling process and potentially impact USMC officer retention and performance.

D. RESEARCH QUESTIONS

1. Primary Research Question

- What characteristics are significant in predicting officer selection to career designation in the USMC?

2. Secondary Research Questions

- Does prior enlisted service increase an officer's likelihood for career designation?
- Does commissioning source increase an officer's likelihood for selection to career designation?
- Does a higher score on physical fitness events such as the Physical Fitness Test (PFT) and Combat Fitness Test (CFT) increase an officer's likelihood for career designation?
- Does higher than average performance on Fitness Reports (FITREPs) as graded through reporting senior's and reviewing officer's relative value increase an officer's likelihood for career designation?
- Does combat service increase an officer's likelihood for career designation?

E. SCOPE AND LIMITATIONS

This thesis will focus on Marine Corps officers that were eligible and screened for career designation on the ORBs from FY 2010 through FY 2013. The research will primarily be quantitative and examined by building an econometric model to determine the effects of various professional and personal characteristics in predicting the selection to CD. The analysis will be conducted by evaluating Marine Corps Total Force System (MCTFS) data contained within the Total Force Data Warehouse (TFDW) and FITREP performance data collected from Manpower Management Support Branch (MMSB). Hypotheses developed from the primary and secondary questions will be confirmed, denied, or found inconclusive through the use of statistical analysis.

F. ORGANIZATION OF THE STUDY

This research is organized into six chapters. Chapter I provides the background and purpose of this study and details the primary and secondary research questions. Chapter II provides a brief history of recent Marine Corps officer force population management. Chapter III reviews current or recent literature that relates to the theoretical methods used in this analysis. Chapter IV describes the variables of the study and analyzes the TFDW and MMSB data. It also explains the coding, cleaning, and aggregation of the final dataset. Chapter V describes the regression models and results for the multivariate data analysis. Chapter VI summarizes the research with conclusions, limitations, and provides recommendations.

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II. USMC OFFICER POPULATION MANAGEMENT

A. INTRODUCTION

The Marine Corps has been through multiple officer population force-shaping methods over the years. Some of the methods include competitive augmentation boards predating the 1990s, augmentation tied to promotion boards in the early 2000s, and the restarting of competitive career designation in 2010. For the purpose of the present research, this study will begin the discussion in the early 1990s with a method known as augmentation. For a more detailed history on augmentation dating back to the 1950s, see Berg and Kusek (1988).

B. AUGMENTATION

1. Brief History

Prior to September 1996, only officers accessed through the Unites States Naval Academy (USNA), the Naval Reserve Officer Training Corps (NROTC) scholarship program, or Marine Enlisted Commissioning Education Program (MECEP) were offered a "regular" commission as they began their active duty service. Officers accessed through other programs such as Officer Candidates Course (OCC), Platoon Leaders Course (PLC), non-scholarship NROTC program, or Enlisted Commissioning Program (ECP) began their active duty service with a "reserve" commission. Officers with a reserve commission then had to be screened through an augmentation board to be "augmented" or to receive a commission in the regular Marine Corps and continue their active duty careers. Officers with a reserve commission had the opportunity to apply for augmentation after their second year on active duty if they received at least one FITREP in an operational assignment (Hosek et al., 2001). USNA and NROTC officers' contracts expired at the five-year mark, at which point they had to be selected for promotion to Captain in order to remain on active duty.

The National Defense Authorization Act (NDAA) of 1992 (1991) directed that all officers of the U.S. military, regardless of accession program, enter active duty with a reserve commission beginning in September of 1996 (Hosek et al., 2001). After that

point, all new officers had to compete for augmentation to continue their careers in the regular Marine Corps.

In fiscal year 2000, the Marine Corps combined the augmentation board with the captain promotion board. Officers selected for promotion to the rank of Captain were now automatically offered augmentation and a regular commission if they chose to remain on active duty. It was around this time that the Marine Corps switched to a "just-in-time" accession mission by retaining "all qualified" officers wanting to remain on active duty (MPP-30 Brief, 2009). Once officers are augmented into the regular Marine Corps, they are allowed to serve until they have been passed over for promotion twice to the next grade.

C. CAREER DESIGNATION

1. All Regular Force

Sec. 501 of the National Defense Authorization Act for fiscal year 2005 (2004) mandated that the active duty list officer force be transitioned to a force of all regular officers. The NDAA for FY 2005 did away with reserve commissions for active duty officers, essentially ending the augmentation boards and the use of the term "augmentation."

The change of the officer active duty list to an all regular force allowed the Marine Corps to transition to the CD board as its force-shaping tool. As announced by Marine Administrative Message (MARADMIN) 316/05 in July of 2005, the CD board would be administered in the same manner as the augmentation board and still in conjunction with the captain promotion boards.

2. Return to Competitive Career Designation

As approved by General Conway in 2009, MARADMIN 021/10 published in January of 2010 announced the Marine Corps' return to competitive career designation. The MARADMIN also announced that the ORB would no longer be held in conjunction with the captain promotion board. The ORB would now be its own, stand-alone board and would be held twice a year as mentioned during the introduction.

3. Career Designation Defined

Career designation is a force-shaping tool that shapes the Marine Corps' officer manpower force by retaining the correct number of officers. It accomplishes that by segregating officers into military occupational specialty (MOS) categories. CD is the competitive process by which the Marine Corps offers junior officers the opportunity to continue their active duty careers. The intent of career designation is to retain the best qualified officers on active duty. Its intent is also to maintain the active component officer population in each year of commissioned service at a level that supports the promotion timing and opportunity guidelines to the rank of Major (MCO 1001.45J, 2008).

Officers who have been considered for promotion to Captain and who have accrued 540 days observed time in their primary MOS are eligible to be considered for CD. The CD eligible population is broken down into five competitive categories: Combat Arms (GRN), Combat Service Support (CSS), Aviation Ground (AIR-GRN), Aviation (AIR), and Law (see Figure 1).

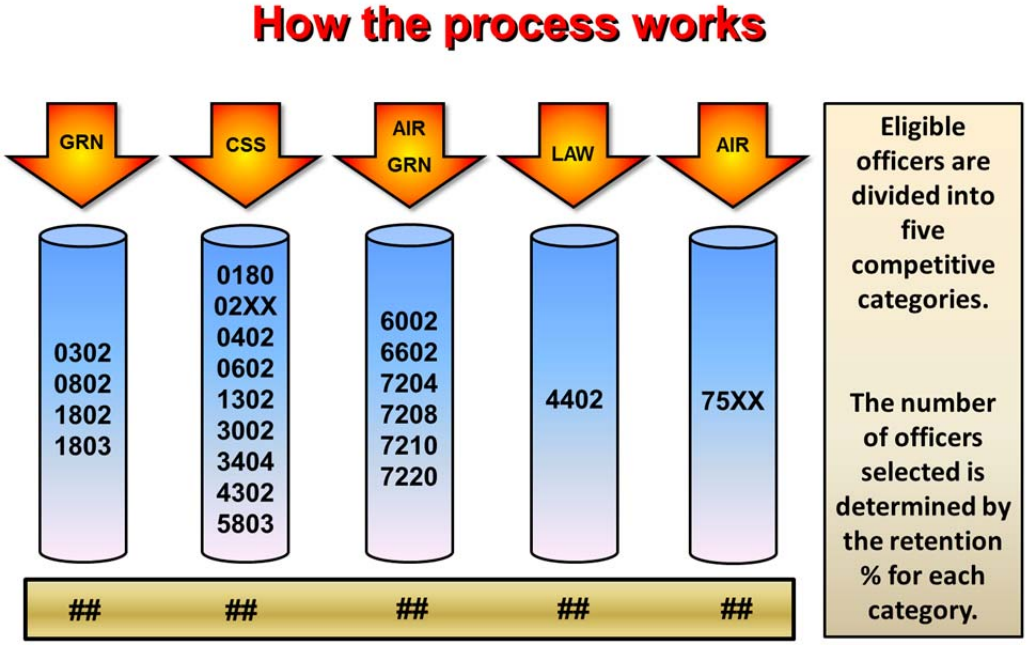

Figure 1. Five Competitive Career Designation Categories by MOS (after McNeil, 2013)

The retention percentage for each competitive category is determined by the Inventory Officer Planner at Manpower Plans, Programs and Budget, and Officer Plans (MPP-30). MPP-30 looks at current inventory along with the forecasted models of accessions and losses in order to ascertain the retention percentage. The percentage is then provided to MMOA-3 who is charged with directing the conduct of the ORB. Each competitive category is given a unique board opportunity that will produce the correct number of selects. Officers selected will be offered the opportunity to continue their active duty careers. Officers who are not selected will execute their end of active service (EAS) and transition to the individual ready reserve (IRR) for the remainder of their contractual obligation. Non-selected officers also have the option of joining the reserve component, where they will continue their service after executing their EAS. Non-selected officers may be eligible for reconsideration on subsequent boards if their EAS is greater than 65 days from the convening date of that board. Selected officers are announced on the ORB Results MARADMIN shortly after the conclusion of the board. According to MCO 1001.45J (2008), the selected officers will then have 45 days after the release of the ORB results to notify the Marine Corps of their intent to accept or decline CD. Selected officers who accept CD within the 45-day window incur a 24-month active duty obligation of service. Officers who fail to respond or decline CD, separate from the Marine Corps at their EAS date.

All active component officers serving on their initial tour of active duty are provided at least one opportunity to be considered for CD before reaching their EAS. Officers who do not meet the 540-day observed time requirement before reaching their EAS are allowed to request an extension in order to be considered at least once (MCO 1001.45J, 2008).

III. LITERATURE REVIEW

A. OVERVIEW

The focus of this study is unique in that the current Marine Corps CD program and the factors that predict success during the selection boards have not been formally studied in the past. As such, previous research in this field is extremely limited, if not absent altogether. The literature review criteria thus included studies from a wide range of disciplines. Each of these studies is linked to the current analysis by its quantitative nature and use of similar econometric probability models.

B. SIMILAR STUDIES

1. Bowman and Mehay (1999)

Bowman and Mehay examined the effect of graduate education on job success by studying a population sample of 6,583 U.S. Navy military officers who were reviewed for promotion to grade O-4. The population data set included promotion outcomes, performance ratings by supervisors, and background characteristics. The authors initially estimated a simple Probit promotion model and found that graduate education was positive and significant. In order to better control for selection bias, the authors estimated a bivariate Probit model with three instrument variables that they determined would address the selection issue. One instrument included dummy variables to control for sub-specialties within line and staff occupations. Those variables were determined by looking at the opportunity cost each specialty incurred by attending graduate school. Another instrument included a preference variable. The preference variable was obtained by the answers the officers gave when asked if they would attend graduate school if the program was offered to them. A third instrument the authors used to address self-selection was a college performance variable which included performance information in college mathematics and science courses. The bivariate Probit promotion model, which included the aforementioned instruments, found results that were 25–50 percent lower than the simple Probit model.

In the end, the authors summarized that officers with any kind of graduate degrees were 10–15 points more likely to be promoted to O-4. They also concluded that selection bias due to unobserved attributes that lead some officers to attend graduate school, accounted for as much as 40–50 percent of the promotion effect of graduate education (Bowman & Mehay, 1999).

2. Farrell and Shields (2002)

The study by Farrell and Shields looks into the economic and demographic factors that determine sporting participation in England by analyzing a population sample of 6,467 men and women aged 16–65 years. Their data set comes from a 1997 Health Survey of England (Farrell & Shields, 2002). The authors used random-effects Probit models to measure the relative influence of the aforementioned economic and demographic factors on the demand for sporting activities in England.

Some of the main results of Farrell's and Shields' research showed that sporting participation is positively related to household income, that educated people participate in sports more than the uneducated, and there is no evidence to support that regional differentials have an effect on sports participation (Farrell & Shields, 2002).

3. McDowell, Singell, and Ziliak (2001)

The research conducted by McDowell, Singell, and Ziliak examines whether the professional attainment and career advancement opportunities of female economists differed from those of their similar male contemporaries (McDowell et al., 2001). The study uses panel data on American Economic Association members from 1964 to 1989 and it includes 633 women and 1,245 men. The authors focused on the professions within academia because of that particular profession's well-defined promotion system and hierarchy (McDowell et al., 2001).

The study uses an ordered-Probit model which results in the indication that women were under-represented at the senior ranks of the profession. Personal attributes and self-selection controls were included to reduce any bias in the study. The self-selection issue was addressed in a similar way to the Bowman and Mehay study. The

authors included instruments that they determined would control for self-selection. One of the instruments was a variable depicting the institutions from which the subjects received their Ph.D. The authors chose to identify those who had a Ph.D. from one of the top 35 economics departments based on a 240 economics departments ranking study. Those that had a Ph.D. from one of the top 35 departments were expected to be of higher ability than those that were not from the top 35. Another instrument was a variable for publishing productivity which took into account the number of articles published, number of co-authors, and a journal quality index.

The bivariate Probit models of promotion from assistant to associate professor and associate to full professor propose that the gender difference in professional attainment arose because women were less likely to be promoted at each stage of the job ladder (McDowell et al., 2001). The study, however, also concluded that models that included time-varying gender dummies suggest that the promotion opportunities of female economists improved over time and even reached a point where evidence indicates no unexplained gender differences in promotion by the end of the 1980s (McDowell et al., 2001).

4. Hoffman (2008)

The study by Hoffman examined the significant factors in predicting promotion to Major, Lieutenant Colonel, and Colonel in the United States Marine Corps. The study looked at a population of 1,435 officers in the ranks of Captain, Major, and Lieutenant Colonel who were in-zone for promotion during the FY 2008 promotion boards. Hoffman used a Probit model to estimate the effect independent variables in the six categories of demographics, performance, military occupational field, combat, commissioning, and assignment had on getting selected for promotion. The model showed several statistically significant variables that affected the dependent variable of getting selected for promotion. The models had eight, nine, and ten statically significant variables for the Captain, Major, and Lieutenant Colonel boards, respectively.

5. Reynolds (2011)

The study by Reynolds closely resembles the 2008 study conducted by Hoffman. In this case, however, Reynolds is particularly interested in examining the effect of being an aviator on promotion to O-5 in the United States Marine Corps. Reynolds looks at a population of 8,271 Marine O-4s eligible for promotion from fiscal years 2004 through 2012.

Using a Probit model, Reynolds first compared Marine aviators against all other occupational specialties and found out that aviators had a decreased selection opportunity to O-5 when compared to all other specialties. In order to compare selected aviators against non-selected aviators, Reynolds used a second restricted Probit model where he used similar categories of independent variables to the ones used in the Hoffman study. The aviator against aviator-restricted Probit model determined that those being part of a fixed-wing community, in possession of an additional MOS as a Weapons and Tactics Instructor (WTI), Professional Military Education (PME) complete, and Special Education/Advanced Degree Programs' graduates had a statistically significant advantage of being selected for promotion to O-5 (Reynolds, 2011).

6. Gonzalez (2011)

The research by Gonzalez set out to identify statistically significant variables associated with promotion to Lieutenant Colonel and selection for command of a Marine Aviation Logistics Squadron (MALS) or Center for Naval Aviation Technical Training Marine Unit for Aviation Maintenance Officers (AMOs) and Aviation Supply Officers (AVNSUPOs). The data set included 102 in-zone AMOs and AVNSUPOs competing for promotion during Fiscal Years 2004–2012. The data consisted of demographic and FITREP data for each officer.

The study utilized a logistic regression and concluded that serving as a MALS Executive Officer (XO), receiving a Meritorious Service Medal, and scoring above the Reviewing Officers' (RO) average scores improved one's probability for selection. The

study was not able to model for command selection because of insufficient data. Instead, the study was only able to report some of the descriptive statistics of the type of officer selected to command: Forty percent served as Operations Officers, 43 percent served as XOs, and 51 percent of the officers scored above their ROs' average markings.

C. CHAPTER SUMMARY

The previous quantitative studies in this literature review identified relevant variables that impacted job success, professional attainment, promotion, and even sports participation. The studies reviewed used similar demographics and performance variables and were all successful in answering their research questions.

One thing that differentiates this study from those reviewed is that this study uses a broader scope of research. One of the studies focused on the professional attainment of females in economics academia; another focused on the success of aviators; and another focused on the success of members of an aviation support MOS. While those studies isolated a particular demographic variable to study, this research will not discriminate between factors and will use all available independent variables to research their effects on the dependent variable.

The Hoffman study is of particular interest to this research because it uses almost identical independent variables and uses the same Probit model that this study will be utilizing with the main difference of using a different dependent variable. Although, where Hoffman only uses one board's worth of data, this study will use eight boards worth of data in order to measure the effects across four years.

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IV. DATA AND PRELIMINARY ANALYSIS

A. INTRODUCTION

The purpose of this chapter is to describe the data used in this research. The chapter will also provide detailed information on the dependent and independent variables used in the study. Additionally, the preliminary analysis will provide descriptive statistics and will examine the factors that influence selection to career designation.

B. DATA SOURCES

The data used for this research was obtained from three different sources: MMOA-3, TFDW, and MMSB. MMOA-3 provided the board population information which was used to build the initial dataset from TFDW. The TFDW dataset was then augmented by a MMSB dataset which provided FITREP performance information. The two datasets were then merged together to complete the 6,732 observation data sample for studying career designation selection probability during the CD boards from fiscal years 2010 through 2013.

1. MMOA-3 Data

As previously mentioned, MMOA-3 provided the initial population information for each of the boards. MMOA-3 data included the names of the officers that were eligible and considered for CD during each of the eight boards from FYs 2010 through 2013, as well as the dependent variable of whether selected for career designation.

2. TFDW Data

The TFDW data used in this analysis consists of cross-sectional and panel data. The TFDW data was the source for the majority of the independent variables, providing 83 of the 96 variables used in the analysis. This dataset included all of the commissioning, foreign language, awards, and demographic variables. It also included most of the performance variables. TFDW captures data on a monthly “snapshot” basis. The typical CD board convening dates since the return to competitive career designation

in FY 2010 have occurred in late January and early August. Therefore, multiple "snapshot" data pulls were conducted on the months closest to the corresponding CD boards. The CD board members look at real-time information on an eligible officer. Since TFDW only collects data on a monthly basis, however, the "snapshot" dates selected were particularly selected because they were the closest possible to the boards. Table 2 provides a detailed list of TFDW "snapshot" dates corresponding to each CD board in the study. Table 2 also provides the number of officers considered during each board as well as the total officer population for the sample.

Table 2. TFDW Data "Snapshots" and CD Board Convene Dates and Board Population Totals

CD Board	**TFDW "Snapshot" Date**	***CD Board Convening Date***	**Officer Population**
FY2010 #1	31 Jan 10	*28 Jan 10*	1,046
FY2010 #2	31 Jul 10	*2 Aug 10*	442
FY2011 #1	31 Jan 11	*28 Jan 11*	707
FY2011 #2	31 Jul 11	*1 Aug 11*	687
FY2012 #1	31 Jan 12	*27 Jan 12*	993
FY2012 #2	31 Jul 12	*6 Aug 12*	966
FY2013 #1	31 Jan 13	*31 Jan 13*	809
FY2013 #2	31 Jul 13	*6 Aug 13*	1,082
		Total Sample	**6,732**

3. MMSB Data

The MMSB dataset provided 13 out of 96 independent variables, which contained FITREP information for each of the officers in the research. FITREP panel data was collected from the beginning of the officer's commissioned service to the convening date

of that officer's CD board. This dataset provided some of the performance variables which included reporting senior (RS) average relative value and average reviewing officer markings. It also included experience variables such as the number of commander or executive officer billets held.

4. Data Coding, Cleaning, and Structure

TFDW data was received in different files separated by demographics, commissioning source, performance, awards, foreign languages, and combat deployments. The commissioning, performance, and demographics files in the TFDW dataset were easily usable for analysis in their raw states. Those files included one row per Marine officer and multiple columns containing the aforementioned information. The foreign language and awards files, however, provided in the TFDW dataset were structured in a way that each officer had multiple rows depicting the different foreign languages tested and multiple personal, service, and unit awards received information. To turn the foreign language file into usable data, a simple pivot table was constructed using Microsoft Excel which resulted in one row per officer and multiple columns with foreign languages tested. The same system was used for restructuring the awards file into a usable format in order to obtain the personal and other awards variables.

The combat deployments file in the TFDW dataset proved to be almost unusable due to the way deployments were recorded in the officer's personal record. The deployment's file listed the number of deployments that officer had participated in, along with the corresponding dates for said deployments. Issues surfaced when the file was examined closer, at which point it was realized that one deployment was sometimes broken into two or three different deployments due to one day gaps on the deployment. The one day gaps are due to administrative or other reasons unknown to the researcher. For example, deployment number one for one individual started on October 6, 2011, stopped on October 31, 2011, and then deployment number two began on November 1, 2011 and continued through April 23, 2012. This is clearly the same six-month deployment instead of two separate deployments. The one day date gap was fairly common throughout the data set which resulted in an inaccurate number of deployments

per officer. The issue was resolved by filtering out the number of days in the "administrative" date gap and combining two or three deployments into the appropriate one deployment. Another issue with the deployment file was the handling of one-year long deployments. One-year long deployments were counted as one deployment for the purposes of this research. A 1–50 day date gap was considered deployment leave or administrative gap and consolidated into one deployment in cases where the deployment's start and end dates added up to roughly one year long. A 51 or more day date gap was considered enough to be a separate deployment and was counted as such in the final dataset.

The Prior_Enlisted variable was constructed using two different variables since TFDW data regarding prior enlisted service was unreliable. The Prior_Enlisted variable was constructed by looking at grade and commissioning source. An officer with a grade of O-2E or O-3E or with a commissioning source of enlisted program was coded as Prior_Enlisted. It should be noted that there is a possibility that a small number of prior enlisted members with a different commissioning source such as NROTC, USNA, PLC, or OCC who did not have the prerequisite amount of active duty time to rate the O-2E or O-3E grade, may not have been included as prior enlisted.

The initial MMSB dataset provided similar obstacles that the foreign language and awards files from TFDW provided. Each officer in the initial MMSB dataset had multiple rows that depicted every FITREP that officer had received since being commissioned until the convening date of the board. After describing the needs of the study in further detail with the MMSB data analyst, however, she was able to code, construct, and provide the data in a summarized version that was immediately ready for analysis.

5. Final Dataset

The final TFDW and MMSB datasets were merged together by corresponding CD board numbers. The individual rows of observation were matched in STATA on a one-to-one merge basis by their unique identifying number. Once all data was merged into one dataset, the unique identifying numbers were dropped and replaced by other unique,

anonymous, and random study identification numbers. The final dataset includes no personally identifiable information (PII) such as lineal control number, social security number, or name that could potentially identify the research subjects. As stated in Table 2, the final sample is composed of 6,732 observations of Marine Corps officers considered for selection to CD during the eight boards from FYs 2010 through 2013. Every one of those observations was used at one point or another throughout the analysis. The descriptive statistics tables show if a different number was used and the corresponding paragraphs will explain why some observations might have been dropped from the analysis. The dataset includes independent variables in the categories of demographics, commissioning, military occupational specialty, performance, and experience that will be used to study the effects those variables have on being selected for career designation. Each of the variables used in this study that were received from the MMOA-3, TFDW, and MMSB datasets will be discussed in further detail in the next section of this chapter.

C. VARIABLES

The variables used in the research are described in Table 3 and are explained in greater detail in the following paragraphs. Table 3 also shows the range describing the 1 or 0 value if the variable is binary or a minimum to maximum number range if the variable is continuous. The minimum to maximum range provided in Table 3 is the range for the observed variables in the dataset and not the minimum or maximum attainable score of each variable.

Table 3. Description of Variables

Variables	Variable Description	*FY10RD1-FY13RD2* Range	*FY13RD2* Range
Dependent Variable			
Selected	Selected for Career Designation	= 1 if Selected = 0 otherwise	= 1 if Selected = 0 otherwise
Independent Variables			
Demographics			
Dependents	Number of dependents	0–7	0–6
Years_Comm_Serv	Years of commissioned service	2–12	2–11
Years_Total_Serv	Years of total service	2–20	2–18
Prior_Enlisted	Grade O-2E/O-3E or commissioned through ENLPGM	= 1 if Prior_Enlisted = 0 otherwise	= 1 if Prior_Enlisted = 0 otherwise
Female	Female Gender	= 1 if Female = 0 otherwise	= 1 if Female = 0 otherwise
White	White Race	= 1 if White = 0 otherwise	= 1 if White = 0 otherwise
Black	Black/African American Race	= 1 if Black = 0 otherwise	= 1 if Black = 0 otherwise
Hispanic	Hispanic Race	= 1 if Hispanic = 0 otherwise	= 1 if Hispanic = 0 otherwise
Other_Race	American Indian, Alaskan, Asian, Hawaiian/Pacific Islander, Other/Unknown	= 1 if Other_Race = 0 otherwise	= 1 if Other_Race = 0 otherwise
Married	Marital Status	= 1 if Married = 0 otherwise	= 1 if Married = 0 otherwise
Greater_College	Doctorate or Master's Degree	= 1 if Greater_College = 0 otherwise	= 1 if Greater_College = 0 otherwise
College	Bachelor's or Associate's Degree	= 1 if College = 0 otherwise	= 1 if College = 0 otherwise
Less_College	High School Diploma	= 1 if Less_College = 0 otherwise	= 1 if Less_College = 0 otherwise
Commissioning			
ENLPGM	MECEP, ECP, or MCP Commissioning Programs	= 1 if ENLPGM = 0 otherwise	= 1 if ENLPGM = 0 otherwise

Variables	Variable Description	*FY10RD1-FY13RD2* Range	*FY13RD2* Range
NROTC	Naval Reserve Officer Training Corps	= 1 if NROTC = 0 otherwise	= 1 if NROTC = 0 otherwise
OCC	Officer Candidate Course	= 1 if OCC = 0 otherwise	= 1 if OCC = 0 otherwise
PLC	Platoon Leaders Class	= 1 if PLC = 0 otherwise	= 1 if PLC = 0 otherwise
USNA	United States Naval Academy	= 1 if USNA = 0 otherwise	= 1 if USNA = 0 otherwise
Military Occupational Specialty			
Combat_Arms_MOS	Combat Arms Military Occupational Group	= 1 if Combat_Arms_MOS = 0 otherwise	= 1 if Combat_Arms_MOS = 0 otherwise
MOS_0302	Infantry Officer	= 1 if MOS_0302 = 0 otherwise	= 1 if MOS_0302 = 0 otherwise
MOS_0802	Field Artillery Officer	= 1 if MOS_0802 = 0 otherwise	= 1 if MOS_0802 = 0 otherwise
MOS_1802	Tank Officer	= 1 if MOS_1802 = 0 otherwise	= 1 if MOS_1802 = 0 otherwise
MOS_1803	Assault Amphibious Vehicle Officer	= 1 if MOS_1803 = 0 otherwise	= 1 if MOS_1803 = 0 otherwise
CSS_MOS	Combat Service Support Military Occupational Group	= 1 if CSS_MOS = 0 otherwise	= 1 if CSS_MOS = 0 otherwise
MOS_0180	Adjutant	= 1 if MOS_0180 = 0 otherwise	= 1 if MOS_0180 = 0 otherwise
MOS_0202	MAGTF Intelligence Officer	= 1 if MOS_0202 = 0 otherwise	= 1 if MOS_0202 = 0 otherwise
MOS_0203	Ground Intelligence Officer	= 1 if MOS_0203 = 0 otherwise	= 1 if MOS_0203 = 0 otherwise
MOS_0204	Counterintelligence/ Human Source Intelligence Officer	= 1 if MOS_0204 = 0 otherwise	= 1 if MOS_0204 = 0 otherwise
MOS_0206	Signals Intelligence/ Ground Electronic Warfare Officer	= 1 if MOS_0206 = 0 otherwise	= 1 if MOS_0206 = 0 otherwise
MOS_0207	Air Intelligence Officer	= 1 if MOS_0207 = 0 otherwise	= 1 if MOS_0207 = 0 otherwise
MOS_0402	Logistics Officer	= 1 if MOS_0402 = 0 otherwise	= 1 if MOS_0402 = 0 otherwise
MOS_0602	Communications Officer	= 1 if MOS_0602 = 0 otherwise	= 1 if MOS_0602 = 0 otherwise
MOS_1302	Combat Engineer Officer	= 1 if MOS_1302 = 0 otherwise	= 1 if MOS_1302 = 0 otherwise
MOS_3002	Ground Supply Officer	= 1 if MOS_3002 = 0 otherwise	= 1 if MOS_3002 = 0 otherwise

Variables	Variable Description	*FY10RD1-FY13RD2* Range	*FY13RD2* Range
MOS_3404	Financial Management Officer	= 1 if MOS_3404 = 0 otherwise	= 1 if MOS_3404 = 0 otherwise
MOS_4302	Public Affairs Officer	= 1 if MOS_4302 = 0 otherwise	= 1 if MOS_4302 = 0 otherwise
MOS_5803	Military Police Officer	= 1 if MOS_5803 = 0 otherwise	= 1 if MOS_5803 = 0 otherwise
Air_Grd_MOS	Aviation-Ground Military Occupational Group	= 1 if Air_Grd_MOS = 0 otherwise	= 1 if Air_Grd_MOS = 0 otherwise
MOS_6002	Aircraft Maintenance Officer	= 1 if MOS_6002 = 0 otherwise	= 1 if MOS_6002 = 0 otherwise
MOS_6602	Aviation Supply Officer	= 1 if MOS_6602 = 0 otherwise	= 1 if MOS_6602 = 0 otherwise
MOS_7204	Low Altitude Air Defense Officer	= 1 if MOS_7204 = 0 otherwise	= 1 if MOS_7204 = 0 otherwise
MOS_7208	Air Support Control Officer	= 1 if MOS_7208 = 0 otherwise	= 1 if MOS_7208 = 0 otherwise
MOS_7210	Air Defense Control Officer	= 1 if MOS_7210 = 0 otherwise	= 1 if MOS_7210 = 0 otherwise
MOS_7220	Air Traffic Control Officer	= 1 if MOS_7220 = 0 otherwise	= 1 if MOS_7220 = 0 otherwise
Law_MOS	Law Military Occupational Group	= 1 if Law_MOS = 0 otherwise	= 1 if Law_MOS = 0 otherwise
MOS_4402	Judge Advocate	= 1 if MOS_4402 = 0 otherwise	= 1 if MOS_4402 = 0 otherwise
Air_MOS	Aviation Military Occupational Group	= 1 if Air_MOS = 0 otherwise	= 1 if Air_MOS = 0 otherwise
MOS_7507	FRS Basic AV-8B Pilot	= 1 if MOS_7507 = 0 otherwise	= 1 if MOS_7507 = 0 otherwise
MOS_7509	AV-8B Qualified Pilot	= 1 if MOS_7509 = 0 otherwise	= 1 if MOS_7509 = 0 otherwise
MOS_7521	FRS Basic F/A-18 Pilot	= 1 if MOS_7521 = 0 otherwise	= 1 if MOS_7521 = 0 otherwise
MOS_7523	F/A-18 Qualified Pilot	= 1 if MOS_7523 = 0 otherwise	= 1 if MOS_7523 = 0 otherwise
MOS_7525	Naval Flight Officer Qualified F/A-18D WSO	= 1 if MOS_7525 = 0 otherwise	= 1 if MOS_7525 = 0 otherwise
MOS_7532	V-22 Qualified Pilot	= 1 if MOS_7532 = 0 otherwise	= 1 if MOS_7532 = 0 otherwise
MOS_7543	EA-6B Qualified Pilot	= 1 if MOS_7543 = 0 otherwise	= 1 if MOS_7543 = 0 otherwise
MOS_7556	KC-130 Co-Pilot	= 1 if MOS_7556 = 0 otherwise	= 1 if MOS_7556 = 0 otherwise
MOS_7557	KC-130 Aircraft Commander Pilot	= 1 if MOS_7557 = 0 otherwise	= 1 if MOS_7557 = 0 otherwise

Variables	Variable Description	*FY10RD1-FY13RD2* Range	*FY13RD2* Range
MOS_7558	FRS Basic CH-53D Pilot	= 1 if MOS_7558 = 0 otherwise	= 1 if MOS_7558 = 0 otherwise
MOS_7560	FRS Basic CH-53E Pilot	= 1 if MOS_7560 = 0 otherwise	= 1 if MOS_7560 = 0 otherwise
MOS_7561	FRS Basic CH-46 Pilot	= 1 if MOS_7561 = 0 otherwise	= 1 if MOS_7561 = 0 otherwise
MOS_7562	CH-46 Qualified Pilot	= 1 if MOS_7562 = 0 otherwise	= 1 if MOS_7562 = 0 otherwise
MOS_7563	UH-1 Qualified Pilot	= 1 if MOS_7563 = 0 otherwise	= 1 if MOS_7563 = 0 otherwise
MOS_7564	CH-53 A/D Qualified Pilot	= 1 if MOS_7564 = 0 otherwise	= 1 if MOS_7564 = 0 otherwise
MOS_7565	AH-1 Qualified Pilot	= 1 if MOS_7565 = 0 otherwise	= 1 if MOS_7565 = 0 otherwise
MOS_7566	CH-53E Qualified Pilot	= 1 if MOS_7566 = 0 otherwise	= 1 if MOS_7566 = 0 otherwise
MOS_7567	FRS Basic UH-1N Pilot	= 1 if MOS_7567 = 0 otherwise	= 1 if MOS_7567 = 0 otherwise
MOS_7568	FRS Basic AH-1 Pilot	= 1 if MOS_7568 = 0 otherwise	= 1 if MOS_7568 = 0 otherwise
MOS_7588	NFO Qualified EA-6B Electronics Warfare Officer	= 1 if MOS_7588 = 0 otherwise	= 1 if MOS_7588 = 0 otherwise
MOS_7599	Flight Student	= 1 if MOS_7599 = 0 otherwise	= 1 if MOS_7599 = 0 otherwise
Performance			
GCT_Total	General Classification Test Score	75–157	90–151
PFT	Physical Fitness Test Score	144–300	144–300
CFT	Combat Fitness Test Score	221–300	250–300
Rifle_Exp	Rifle Expert	= 1 if Rifle_Exp = 0 otherwise	= 1 if Rifle_Exp = 0 otherwise
Rifle_Sharp	Rifle Sharpshooter	= 1 if Rifle_Sharp = 0 otherwise	= 1 if Rifle_Sharp = 0 otherwise
Rifle_Marks	Rifle Marksman	= 1 if Rifle_Marks = 0 otherwise	= 1 if Rifle_Marks = 0 otherwise
Rifle_Unq	Rifle Unqualified	= 1 if Rifle_Unq = 0 otherwise	= 1 if Rifle_Unq = 0 otherwise
Pistol_Exp	Pistol Expert	= 1 if Pistol_Exp = 0 otherwise	= 1 if Pistol_Exp = 0 otherwise
Pistol_Sharp	Pistol Sharpshooter	= 1 if Pistol_Sharp = 0 otherwise	= 1 if Pistol_Sharp = 0 otherwise

Variables	Variable Description	*FY10RD1-FY13RD2* Range	*FY13RD2* Range
Pistol_Marks	Rifle Marksman	= 1 if Rifle_Marks = 0 otherwise	= 1 if Rifle_Marks = 0 otherwise
Pistol_Unq	Pistol Unqualified	= 1 if Pistol_Unq = 0 otherwise	= 1 if Pistol_Unq = 0 otherwise
Water_Unq	Water Survival Unqualified	= 1 if Water_Unq = 0 otherwise	= 1 if Water_Unq = 0 otherwise
Water_Qualified	Water Survival Class 1, 2, 3, 4, WSQ, Basic, Intermediate, Advanced	= 1 if Water_Qualified = 0 otherwise	= 1 if Water_Qualified = 0 otherwise
Water_Greater	Combat Water Safety Swimmer or Instructor of Water Survival	= 1 if Water_Greater = 0 otherwise	= 1 if Water_Greater = 0 otherwise
Adverse_Rpt	Adverse Fitness Report	= 1 if Adverse_Rpt = 0 otherwise	= 1 if Adverse_Rpt = 0 otherwise
RV_Pro_Avg	"At Processing" Relative Value Average of Averages	80–100	80–100
RV_Pro_Upper	Relative Value Avg fell between 93.34–100	= 1 if RV_Pro_Upper = 0 otherwise	= 1 if RV_Pro_Upper = 0 otherwise
RV_Pro_Middle	Relative Value Avg fell between 86.67–93.33	= 1 if RV_Pro_Middle = 0 otherwise	= 1 if RV_Pro_Middle = 0 otherwise
RV_Pro_Lower	Relative Value Avg fell between 80.00–86.66	= 1 if RV_Pro_Lower = 0 otherwise	= 1 if RV_Pro_Lower = 0 otherwise
RV_Cum_Avg	"Cumulative" Relative Value Average of Averages	80–100	80–100
RV_Cum_Upper	Relative Value Avg fell between 93.34–100	= 1 if RV_Cum_Upper = 0 otherwise	= 1 if RV_Cum_Upper = 0 otherwise
RV_Cum_Middle	Relative Value Avg fell between 86.67–93.33	= 1 if RV_Cum_Middle = 0 otherwise	= 1 if RV_Cum_Middle = 0 otherwise
RV_Cum_Lower	Relative Value Avg fell between 80.00–86.66	= 1 if RV_Cum_Lower = 0 otherwise	= 1 if RV_Cum_Lower = 0 otherwise
ROPV_Avg	Average RO Relative Value "At Processing"	-2.8956–6	-2.3127–3.8333
ROCV_Avg	Average RO Relative Value "Cumulative"	-2.9424–2.6763	-1.9853–2.6763
Personal_Awards	Sum of Personal Awards	0–28	0–9
Other_Awards	Sum of Decorations &	0–54	0–46

Variables	Variable Description	*FY10RD1-FY13RD2* Range	*FY13RD2* Range
	Service and Unit Awards		
Foreign_Language	At least one officially tested and recorded foreign language	= 1 if Foreign_Language = 0 otherwise	= 1 if Foreign_Language = 0 otherwise
Experience			
Billet_Cmdr	Sum of FITREPs with "Commander" in billet description	0–9	0–9
Billet_XO	Sum of FITREPs with "XO" or "Executive Officer" in billet description	0–6	0–5
Cmbt_Deployment	One Combat Deployment	= 1 if Cmbt_Deployment = 0 otherwise	= 1 if Cmbt_Deployment = 0 otherwise
Cmbt_Deployment2	Two Combat Deployments	= 1 if Cmbt_Deployment2 = 0 otherwise	= 1 if Cmbt_Deployment2 = 0 otherwise
Cmbt_Deployment3_Plus	Three or more Combat Deployments	= 1 if Cmbt_Deployment3_Plus = 0 otherwise	= 1 if Cmbt_Deployment3_Plus = 0 otherwise

1. Dependent Variable

The dependent variable of the study is selection to career designation. The variable takes on the value of 1 if the officer is selected for CD and a value of 0 if the officer failed to be selected. MMOA-3 is the data source for this variable. The selection statistics by MOS category for each of the eight boards examined in this research are illustrated in Table 4. As seen from the table, the percentage totals for those selected by MOS category are fairly consistent with the pre-determined percentage goals of each career designation board. Table 4 also illustrates the aggregate totals for each of the eight boards in the data sample.

Table 4. Selection Statistics by MOS Category for FY10 Round 1 through FY13 Round 2 Boards

CD Board		GRND	CSS	Air-GRND	Law	Air	Totals
FY10 ORB #1	Eligible	304	445	71	9	217	1046
	Selected	260	388	61	9	214	932
	Percentage	***85.53***	***87.19***	***85.92***	***100***	***98.62***	***91.45***
FY10 ORB #2	Eligible	149	255	26	1	11	442
	Selected	119	204	21	1	10	355
	Percentage	***79.87***	***80.00***	***80.77***	***100***	***90.91***	***86.31***
FY11 ORB #1	Eligible	203	415	62	3	24	707
	Selected	132	269	43	3	22	469
	Percentage	***65.02***	***64.82***	***69.35***	***100***	***91.67***	***78.17***
FY11 ORB #2	Eligible	164	309	66	13	135	687
	Selected	107	201	43	13	135	499
	Percentage	***65.24***	***65.05***	***65.15***	***100***	***100***	***79.09***
FY12 ORB #1	Eligible	292	525	110	7	59	993
	Selected	175	315	66	6	56	618
	Percentage	***59.93***	***60.00***	***60.00***	***85.71***	***94.92***	***72.11***
FY12 ORB #2	Eligible	273	379	86	32	196	966
	Selected	163	227	52	28	186	656
	Percentage	***59.71***	***59.89***	***60.47***	***87.50***	***94.90***	***72.49***
FY13 ORB #1	Eligible	216	387	82	25	99	809
	Selected	119	213	45	21	94	492
	Percentage	***55.9***	***55.04***	***54.88***	***84.00***	***94.95***	***68.95***
FY13 ORB #2	Eligible	255	461	93	46	227	1082
	Selected	141	255	51	39	216	702
	Percentage	***55.29***	***55.31***	***54.84***	***84.78***	***95.15***	***69.07***
Combined Totals	Eligible	1,856	3,176	596	136	968	6732
	Selected	1,216	2,072	382	120	933	4723
	Percentage	***65.52***	***65.24***	***64.9***	***88.24***	***96.38***	***76.06***

2. Independent Variables

As shown in Table 3, the independent variables are organized into five separate categories. The categories consist of demographics, commissioning, military occupational specialty, performance, and experience. TFDW and MMSB were used to obtain the independent variables in this study. The five categories for the independent variables will be discussed in further detail in the following sections. The descriptive statistics tables in each of the categories will illustrate the number of observations, mean,

standard deviation, minimum, and maximum values for each independent variable. The descriptive statistics tables presented in this chapter should be interpreted in the following manner: The mean for binary variables such as Female shows that out of the 4,723 CD selected officers in the sample, 8 percent are female. The mean for continuous variables, such as Yeas_Comm_Serv, depicts that the average number of total years of commissioned service for the 4,723 selected officers in the sample is 3.5 years. Appendices L and M provide descriptive statistics tables of selected and not selected officers by variable. Those tables include the total number of observations of each particular variable and they provide the mean, standard deviation, min, and max for each variable. The tables in appendices L and M should be interpreted as follows: There are 510 total females in the sample and out of those 510, 74 percent were selected for CD. Appendices L and M should be used to interpret binary variables only, as the means for continuous variables will only show the overall selected average.

The data presented in the descriptive statistics serves only to show the effect of the raw data on the dependent variable and in no way represents causal effect of a certain independent variable. Variables that have a statistically significant difference for those who were selected compared to those who were not selected are marked with an * for significance at the 10 percent level, ** at the 5 percent level, and *** at the 1 percent level. The tables will also be divided into selected and not selected officer statistics for all eight boards and statistics for selected and not selected FY12 Round 1 through FY13 Round 2 board officers only. FY12 Round 1 through FY13 Round 2 were the last and latest four boards in the sample and their statistics are shown separately to illustrate the most current statistics of the CD boards as of the time of this study. The selection rates for those last four boards are 60 percent, 60 percent, 55 percent, and 55 percent, respectively. These four boards were separated from the full sample because they have the most competitive and consistent selection percentages throughout the sample.

a. Demographics

As explained earlier in Chapter II, the intent of the career designation program is to retain the best qualified officers on active duty. As such, it is unlikely that career designation boards consider demographics in selection deliberations. There is plenty academic evidence, however, that point to promotion and career advancement probability that is explained by demographics. It is therefore necessary to control for demographics in isolating any commissioning, military occupational specialty, performance, or experience effect on selection for career designation.

Most of the demographic variables are self-explanatory and the composition of the 82 variables in the sample is described in Table 3. The descriptive statistics of the demographic variables for officers selected and not selected for career designation are illustrated in Tables 5 and 6. Table 5 shows the statistics for data from all eight boards in the sample combined and Table 6 shows the statistics for the FY12 Round 1 through FY13 Round 2 boards only. The years of commissioned service (Years_Comm_Serv) variable contained missing observations due to missing corresponding data in the case of 96 officers. This resulted in the Years_Comm_Serv variable missing 96 out of 6,732 observations.

Table 5. Demographic Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Dependents***	4723	0.858	1.133	0	7
Years_Comm_Serv***	4649	3.505	1.184	2	12
Years_Total_Serv***	4723	5.706	3.409	2	20
Prior_Enlisted***	4723	0.160	0.367	0	1
Female*	4723	0.080	0.271	0	1
White***	4723	0.825	0.380	0	1
Black**	4723	0.035	0.184	0	1
Hispanic**	4723	0.060	0.238	0	1
Other_Race	4723	0.079	0.270	0	1
Married***	4723	0.530	0.499	0	1
Greater_College	4723	0.029	0.167	0	1
College	4723	0.943	0.233	0	1
Less_College***	4723	0.029	0.167	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Dependents***	2009	0.601	0.936	0	7
Years_Comm_Serv***	1987	3.206	0.806	2	9
Years_Total_Serv***	2009	4.875	2.773	2	18
Prior_Enlisted***	2009	0.093	0.291	0	1
Female*	2009	0.066	0.249	0	1
White***	2009	0.791	0.407	0	1
Black**	2009	0.047	0.211	0	1
Hispanic**	2009	0.075	0.263	0	1
Other_Race	2009	0.088	0.283	0	1
Married***	2009	0.417	0.493	0	1
Greater_College	2009	0.023	0.151	0	1
College	2009	0.936	0.245	0	1
Less_College***	2009	0.041	0.198	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 6. Demographic Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Dependents***	2468	0.878	1.133	0	6
Years_Comm_Serv***	2443	3.544	1.077	2	12
Years_Total_Serv***	2468	5.773	3.412	2	20
Prior_Enlisted***	2468	0.166	0.372	0	1
Female	2468	0.075	0.263	0	1
White**	2468	0.819	0.385	0	1
Black**	2468	0.032	0.175	0	1
Hispanic	2468	0.058	0.234	0	1
Other_Race	2468	0.092	0.288	0	1
Married***	2468	0.542	0.498	0	1
Greater_College	2468	0.037	0.188	0	1
College	2468	0.919	0.272	0	1
Less_College	2468	0.044	0.205	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Dependents***	1382	0.597	0.927	0	7
Years_Comm_Serv***	1371	3.213	0.774	2	9
Years_Total_Serv***	1382	4.849	2.740	2	18
Prior_Enlisted***	1382	0.089	0.285	0	1
Female	1382	0.066	0.248	0	1
White**	1382	0.789	0.408	0	1
Black**	1382	0.047	0.212	0	1
Hispanic	1382	0.071	0.257	0	1
Other_Race	1382	0.093	0.291	0	1
Married***	1382	0.417	0.493	0	1
Greater_College	1382	0.027	0.164	0	1
College	1382	0.922	0.269	0	1
Less_College	1382	0.051	0.219	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 5 shows that Male, Married, and White race are the dominant demographic variables in selected officers with 92 percent of officers being male, 53 percent married, and 82.5 percent of White race. Male and White remain the dominant demographic in the not selected population as well with 93.4 percent being male and 79.1 percent being white. The demographics category includes the Prior_Enlisted variable which is a variable of interest in order to answer one of the secondary research questions, "Does prior enlisted service increase an officer's likelihood for career designation?" Table 5 descriptive statistics show that 16 percent (756 officers) out of the 4,723 selected officers were prior enlisted, while 9.3 percent (187 officers) out of the 2,009 not selected were prior enlisted officers. The difference is statistically significant at the 1 percent level. This research question along with the others will be addressed at greater length in Chapters V and VI.

b. Commissioning

The commissioning category includes the five commissioning sources included in the sample. The five commissioning sources are coded as binary variables and consist of Enlisted Programs (ENLPGM), Naval Reserve Officer Training Corps (NROTC), Officer Candidate Course (OCC), Platoon Leaders Course (PLC), and United States Naval Academy (USNA). The ENLPGM variable includes officers commissioned through the Meritorious Enlisted Commissioning Program (MECEP), Enlisted Commissioning Program (ECP), or the Meritorious Commissioning Program (MCP).

The descriptive statistics for commissioning variables for officers selected and not selected for career designation are illustrated in Tables 7 and 8. Again due to missing data, there are a total of 105 missing observations out of the 6,732 sample in the descriptive statistics tables.

Table 7. Commissioning Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
ENLPGM***	4642	0.122	0.328	0	1
NROTC	4642	0.147	0.354	0	1
OCC*	4642	0.294	0.456	0	1
PLC***	4642	0.277	0.448	0	1
USNA	4642	0.159	0.366	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
ENLPGM***	1985	0.060	0.237	0	1
NROTC	1985	0.140	0.347	0	1
OCC*	1985	0.317	0.465	0	1
PLC***	1985	0.320	0.467	0	1
USNA	1985	0.164	0.370	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 8. Commissioning Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
ENLPGM***	2440	0.129	0.335	0	1
NROTC	2440	0.132	0.339	0	1
OCC	2440	0.324	0.468	0	1
PLC**	2440	0.284	0.451	0	1
USNA***	2440	0.131	0.337	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
ENLPGM***	1368	0.059	0.236	0	1
NROTC	1368	0.132	0.339	0	1
OCC	1368	0.319	0.466	0	1
PLC**	1368	0.321	0.467	0	1
USNA***	1368	0.169	0.375	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

The commissioning category includes the commissioning source variables of interest in order to answer another one of the secondary research questions. Table 7 shows the NROTC, OCC, PLC, and USNA variable as fairly consistent for selected and not selected officers. The ENLPGM variable shows the largest marginal difference between the Means of the selected and not selected population. The ENLPGM variable shows that 12.2 percent (568 officers) out of the 4,642 that were selected for career designation were commissioned through an enlisted program, while 6 percent (119 officers) out of the 1,985 not selected were commissioned through an enlisted program. The difference in the Means is statistically significant at the 1 percent level. The overall sample averages seem to be fairly consistent with the FY12 Round 1 through FY13 Round 2 boards sample in this category as shown in Table 8.

c. Military Occupational Specialty

The military occupational specialty (MOS) category contains the five different MOS category variables the officers are broken into when being evaluated for career designation. The MOS categories are shown in Table 1 and Figure 1. Most Marine Corps promotion and selection studies only break the MOS down into categories because promotion and selection boards do not discriminate by individual MOS. Hoffman's 2008 study on promotion separates the MOSs into seven categories and examines the effects of those seven categories on promotion. This career designation study is unique because the CD board actually breaks those categories down even further and the board does discriminate by the five MOS categories previously mentioned of combat arms, combat service support, aviation-ground, law, and aviation. Each MOS category gets its own selection percentage rate as it was previously explained in Chapter II. It is for that reason that this study includes a separate independent variable for each MOS in the data. Comparing an officer with a combat arms MOS to an officer with an aviation MOS would not be practical because they are in different competitive categories which have different selection percentages. For the purpose of this study, it is more useful to compare a Field Artillery Officer with an Infantry Officer because they belong to the same competitive category of combat arms and they actually compete against each other for selection to CD. One exception to this is the Law competitive category, which only

includes one MOS: 4402 Judge Advocate. In this one category, comparing MOSs is not as useful since all the members of that category are of the same MOS and so it would be necessary to look at other independent variables when comparing officers in this category.

Tables 9 through 20 describe the MOS descriptive statistics for officers selected and not selected for CD; first by illustrating the different MOS categories and then by illustrating each individual MOS in its corresponding MOS competitive category.

Table 9. Military Occupational Specialty Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Combat_Arms_MOS***	4723	0.257	0.437	0	1
CSS_MOS***	4723	0.439	0.496	0	1
Air_Grd_MOS***	4723	0.081	0.273	0	1
Law_MOS***	4723	0.025	0.157	0	1
Air_MOS***	4723	0.198	0.398	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Combat_Arms_MOS***	2009	0.319	0.466	0	1
CSS_MOS***	2009	0.550	0.498	0	1
Air_Grd_MOS***	2009	0.107	0.309	0	1
Law_MOS***	2009	0.008	0.089	0	1
Air_MOS***	2009	0.017	0.131	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 10. Military Occupational Specialty Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Combat_Arms_MOS***	2468	0.242	0.429	0	1
CSS_MOS***	2468	0.409	0.492	0	1
Air_Grd_MOS**	2468	0.087	0.281	0	1
Law_MOS***	2468	0.038	0.191	0	1
Air_MOS***	2468	0.224	0.417	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Combat_Arms_MOS***	1382	0.317	0.465	0	1
CSS_MOS***	1382	0.537	0.499	0	1
Air_Grd_MOS**	1382	0.114	0.317	0	1
Law_MOS***	1382	0.012	0.107	0	1
Air_MOS***	1382	0.021	0.143	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 11. Combat Arms MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_0302***	1216	0.613	0.487	0	1
MOS_0802*	1216	0.296	0.457	0	1
MOS_1802	1216	0.035	0.183	0	1
MOS_1803**	1216	0.056	0.230	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_0302***	640	0.663	0.473	0	1
MOS_0802*	640	0.278	0.448	0	1
MOS_1802	640	0.034	0.182	0	1
MOS_1803**	640	0.025	0.156	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 12. Combat Arms MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_0302***	598	0.559	0.497	0	1
MOS_0802**	598	0.329	0.470	0	1
MOS_1802	598	0.047	0.211	0	1
MOS_1803*	598	0.065	0.247	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_0302***	438	0.616	0.487	0	1
MOS_0802**	438	0.311	0.463	0	1
MOS_1802	438	0.046	0.209	0	1
MOS_1803*	438	0.027	0.163	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 13. Combat Service Support MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_0180*	2072	0.065	0.247	0	1
MOS_0202**	2072	0.003	0.054	0	1
MOS_0203	2072	0.085	0.280	0	1
MOS_0204	2072	0.024	0.152	0	1
MOS_0206	2072	0.039	0.194	0	1
MOS_0207	2072	0.055	0.228	0	1
MOS_0402***	2072	0.270	0.444	0	1
MOS_0602***	2072	0.171	0.377	0	1
MOS_1302*	2072	0.096	0.295	0	1
MOS_3002***	2072	0.089	0.285	0	1
MOS_3404***	2072	0.032	0.176	0	1
MOS_4302*	2072	0.024	0.153	0	1
MOS_5803*	2072	0.046	0.209	0	1
Officers Not Selected					

Variables	Obs	Mean	Std. Dev.	Min	Max
MOS_0180*	1104	0.066	0.249	0	1
MOS_0202**	1104	0.008	0.090	0	1
MOS_0203	1104	0.067	0.250	0	1
MOS_0204	1104	0.014	0.120	0	1
MOS_0206	1104	0.031	0.173	0	1
MOS_0207	1104	0.034	0.182	0	1
MOS_0402***	1104	0.276	0.447	0	1
MOS_0602***	1104	0.171	0.377	0	1
MOS_1302*	1104	0.095	0.293	0	1
MOS_3002***	1104	0.117	0.321	0	1
MOS_3404***	1104	0.043	0.202	0	1
MOS_4302*	1104	0.028	0.165	0	1
MOS_5803*	1104	0.049	0.216	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 14. **Co**mbat Service Support MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_0180	1010	0.072	0.259	0	1
MOS_0202***	1010	0.001	0.031	0	1
MOS_0203	1010	0.090	0.286	0	1
MOS_0204	1010	0.022	0.146	0	1
MOS_0206	1010	0.038	0.190	0	1
MOS_0207	1010	0.047	0.211	0	1
MOS_0402***	1010	0.248	0.432	0	1
MOS_0602*	1010	0.162	0.369	0	1
MOS_1302**	1010	0.097	0.296	0	1
MOS_3002*	1010	0.107	0.309	0	1
MOS_3404***	1010	0.039	0.193	0	1
MOS_4302	1010	0.028	0.164	0	1
MOS_5803	1010	0.050	0.219	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_0180	742	0.063	0.244	0	1
MOS_0202***	742	0.012	0.110	0	1
MOS_0203	742	0.071	0.258	0	1

MOS_0204	742	0.013	0.115	0	1
MOS_0206	742	0.035	0.184	0	1
MOS_0207	742	0.036	0.187	0	1
MOS_0402***	742	0.274	0.446	0	1
MOS_0602*	742	0.151	0.358	0	1
MOS_1302**	742	0.102	0.303	0	1
MOS_3002*	742	0.104	0.305	0	1
MOS_3404***	742	0.057	0.231	0	1
MOS_4302	742	0.032	0.177	0	1
MOS_5803	742	0.049	0.215	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 15. Aviation-Ground MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_6002	382	0.209	0.407	0	1
MOS_6602	382	0.175	0.381	0	1
MOS_7204	382	0.092	0.289	0	1
MOS_7208***	382	0.249	0.433	0	1
MOS_7210	382	0.139	0.346	0	1
MOS_7220	382	0.136	0.343	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_6002	214	0.210	0.408	0	1
MOS_6602	214	0.121	0.327	0	1
MOS_7204	214	0.075	0.264	0	1
MOS_7208***	214	0.369	0.484	0	1
MOS_7210	214	0.112	0.316	0	1
MOS_7220	214	0.112	0.316	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 16. Aviation-Ground MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_6002*	214	0.229	0.421	0	1
MOS_6602	214	0.182	0.387	0	1
MOS_7204	214	0.084	0.278	0	1
MOS_7208**	214	0.243	0.430	0	1
MOS_7210	214	0.136	0.343	0	1
MOS_7220	214	0.126	0.333	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_6002*	157	0.248	0.433	0	1
MOS_6602	157	0.121	0.327	0	1
MOS_7204	157	0.051	0.221	0	1
MOS_7208**	157	0.357	0.481	0	1
MOS_7210	157	0.102	0.303	0	1
MOS_7220	157	0.121	0.327	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 17. Law MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_4402***	120	1.000	0.000	1	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_4402***	16	1.000	0.000	1	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 18. Law MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_4402***	94	1.000	0.000	1	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_4402***	16	1.000	0.000	1	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 19. Aviation MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_7507	933	0.001	0.033	0	1
MOS_7509***	933	0.078	0.269	0	1
MOS_7521	933	0.003	0.057	0	1
MOS_7523***	933	0.100	0.300	0	1
MOS_7525***	933	0.040	0.195	0	1
MOS_7532***	933	0.081	0.274	0	1
MOS_7543**	933	0.012	0.108	0	1
MOS_7556***	933	0.043	0.203	0	1
MOS_7557***	933	0.032	0.177	0	1
MOS_7558	933	0.001	0.033	0	1
MOS_7560*	933	0.008	0.086	0	1
MOS_7561*	933	0.008	0.086	0	1
MOS_7562***	933	0.091	0.288	0	1
MOS_7563***	933	0.114	0.318	0	1
MOS_7564	933	0.004	0.065	0	1
MOS_7565***	933	0.159	0.366	0	1
MOS_7566***	933	0.169	0.375	0	1
MOS_7567	933	0.002	0.046	0	1
MOS_7568	933	0.016	0.126	0	1
MOS_7588***	933	0.035	0.185	0	1
MOS_7599	933	0.003	0.057	0	1

Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_7507	35	0.057	0.236	0	1
MOS_7509***	35	0.114	0.323	0	1
MOS_7521	35	0.000	0.000	0	0
MOS_7523***	35	0.029	0.169	0	1
MOS_7525***	35	0.000	0.000	0	0
MOS_7532***	35	0.000	0.000	0	0
MOS_7543**	35	0.000	0.000	0	0
MOS_7556***	35	0.057	0.236	0	1
MOS_7557***	35	0.000	0.000	0	0
MOS_7558	35	0.000	0.000	0	0
MOS_7560*	35	0.000	0.000	0	0
MOS_7561*	35	0.000	0.000	0	0
MOS_7562***	35	0.086	0.284	0	1
MOS_7563***	35	0.057	0.236	0	1
MOS_7564	35	0.000	0.000	0	0
MOS_7565***	35	0.200	0.406	0	1
MOS_7566***	35	0.200	0.406	0	1
MOS_7567	35	0.000	0.000	0	0
MOS_7568	35	0.200	0.406	0	1
MOS_7588***	35	0.000	0.000	0	0
MOS_7599	35	0.000	0.000	0	0
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 20. Aviation MOS Competitive Category Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_7507	552	0.002	0.043	0	1
MOS_7509***	552	0.071	0.256	0	1
MOS_7521	552	0.005	0.074	0	1
MOS_7523***	552	0.085	0.279	0	1
MOS_7525**	552	0.020	0.140	0	1
MOS_7532***	552	0.105	0.307	0	1
MOS_7543*	552	0.009	0.095	0	1
MOS_7556***	552	0.047	0.212	0	1
MOS_7557***	552	0.029	0.168	0	1
MOS_7558	552	0.000	0.000	0	0
MOS_7560	552	0.005	0.074	0	1
MOS_7561	552	0.005	0.074	0	1

MOS_7562***	552	0.085	0.279	0	1
MOS_7563***	552	0.112	0.316	0	1
MOS_7564	552	0.000	0.000	0	0
MOS_7565***	552	0.174	0.379	0	1
MOS_7566***	552	0.179	0.384	0	1
MOS_7567	552	0.002	0.043	0	1
MOS_7568	552	0.022	0.146	0	1
MOS_7588***	552	0.038	0.191	0	1
MOS_7599	552	0.004	0.060	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
MOS_7507	29	0.069	0.258	0	1
MOS_7509***	29	0.138	0.351	0	1
MOS_7521	29	0.000	0.000	0	0
MOS_7523***	29	0.034	0.186	0	1
MOS_7525**	29	0.000	0.000	0	0
MOS_7532***	29	0.000	0.000	0	0
MOS_7543*	29	0.000	0.000	0	0
MOS_7556***	29	0.069	0.258	0	1
MOS_7557***	29	0.000	0.000	0	0
MOS_7558	29	0.000	0.000	0	0
MOS_7560	29	0.000	0.000	0	0
MOS_7561	29	0.000	0.000	0	0
MOS_7562***	29	0.034	0.186	0	1
MOS_7563***	29	0.069	0.258	0	1
MOS_7564	29	0.000	0.000	0	0
MOS_7565***	29	0.241	0.435	0	1
MOS_7566***	29	0.103	0.310	0	1
MOS_7567	29	0.000	0.000	0	0
MOS_7568	29	0.241	0.435	0	1
MOS_7588***	29	0.000	0.000	0	0
MOS_7599	29	0.000	0.000	0	0
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

In examining the descriptive statistics of the military occupational specialties, the researcher found several MOSs with sizable marginal difference between those selected and not selected for a certain MOS. Table 12 from the FY12 Round 1 through FY13 Round 2 Boards combat arms MOS competitive category shows that 56 percent (335 officers) out of 598 of MOS_0302 Infantry Officer specialty were selected, while 62 percent (272 officers) out of 438 were not selected. The largest marginal differences

between selected and not selected officers came from the aviation-ground MOS competitive category from the FY12 Round 1 through FY13 Round 2 Boards. Table 16 shows that 24 percent (51 officers) out of 214 of MOS_7208 Air Support Control Officer specialty were selected, while 36 percent (56 officers) out of 157 were not selected.

d. Performance

As is the case in other promotion and selection studies, the performance category is considered the most critical and complex set of variables evaluated in this analysis with regard to accurately isolating the effects of an officer's performance on CD probability. To stay true to its policy of retaining the "best qualified officers," the variables in this category are believed to be the best predictors for being selected for career designated in the USMC. The performance category includes quantitative performance measures that are used to assess officers who are being considered for CD. Some of the variables in this category are not as self-explanatory as those from the other categories. As such, the variables that the author believes need further explanation are listed below.

(1) GCT_Total. The GCT_Total variable is a continuous variable that describes the General Classification Test (GCT) score of the officers in the sample. The GCT is a math, reading, and reasoning skills evaluation with a maximum score of 160 that is used to measure the mental aptitude of officers. The test is given to all commissioned and warrant officers at The Basic School and it is used in place of the ASVAB the enlisted service members take before initial entry to the military. Similar to the ASVAB for enlisted members, according to MCO 1230.5B, the GCT plays a significant role in the selection of an officer's MOS.

(2) PFT. The PFT variable is a continuous variable that describes the Physical Fitness Test (PFT) score of the officers in the sample. PFT scoring is based on a 0 to 300 point system and consists of three events: pull-ups (males) or flexed arm hang (females), crunches, and a three-mile run. Appendix A describes the minimum requirements to pass the PFT and also lists the three PFT classifications. Appendices B and C describe the female and male PFT scoring tables.

(3) CFT. The CFT variable is also a continuous variable and it describes the Combat Fitness Test (CFT) score of the officers in the sample. The CFT is also based on

a 0 to 300 point system and it also consists of three events: movement to contact (MTC), ammunition lift (AL), and maneuver under fire (MANUF). Appendix D describes the CFT's minimum passing requirements and classification. Due to the complexity of CFT scoring, refer to MCO 6100.13 for the female and male scoring tables.

(4) RV_Pro_Avg. The RV_Pro_Avg variable describes the average of the relative value "at processing" averages of all the FITREPs of an officer in the sample. The relative value average is based on an 80 to 100 percent normalizing scale, with 90 percent considered as the median or average for a reporting senior's profile. Eighty percent is the lowest marked FITREP while 100 percent is the highest. This variable represents the average of the averages on the date that the FITREP was processed and remains constant over time on an officer's MBS.

Other studies focus almost exclusively on "cumulative" average as a measure of performance because "cumulative" relative value measures how that officer's FITREP holds up over time when the reporting senior grades other officers of the same rank. The reason why "at processing" is also used in this study is because the officers in this analysis that are being evaluated for CD may only have three or four observed FITREPs in their personal record by the time of the board. Since board members could potentially only have a minimum of 540 days of observed performance to decide a candidate's fate, the researcher believes board members look at every possible measure of performance to include "at processing" averages to help them make their decision. Whether or not this variable plays a significant role in predicting selection will be answered in Chapter V. Appendices E through I are provided in order to more clearly understand this complex grading system and its use as a variable in this study.

(5) RV_Cum_Avg. The RV_Cum_Avg variable describes the average of the relative value "cumulative" averages of all the FITREPs of an officer in the sample. This variable is measured in the same way as the RV_Pro_Avg except that the "cumulative" relative value average changes over time in order to adjust and normalize a reporting senior's grading profile. An officer could have a 100 percent relative value average at processing, but could fall down to even below the 90 percent level in "cumulative" if the officer's reporting senior grades other officers above him on FITREPs. This variable is

believed to be the best measure of performance as measured by the FITREP because it measures how an officer's performance holds up over time compared to other officers that the reporting senior evaluates.

A downside to using this variable is that the RV_Cum_Avg data used in this study is not the exact number the CD board looked at when they evaluated each officer for CD selection in their corresponding boards. MMSB does not have the ability to look at "snapshot dates" when pulling this variable as TFDW did with demographic data. The cumulative averages data used here are the current cumulative averages as of February 2014. This is important because a selected officer from the FY11 Round 1 board may have had an RV_Cum_Avg of 96 percent at the time of the board and was selected with the 96 percent recorded average. By the time the data was pulled in February 2014, that selected officer's 96 percent has the potential to now be lower or higher depending on how the reporting seniors continued to grade other officers in the time since the board occurred. The averages that have the biggest chance of changing are those of the officers considered in the earlier boards of the sample. The FY13 Round 2 board averages have the smallest chance of change since the data was pulled only five months after the board was convened. As was the case for the previous variable, Appendices E through I are provided in order to more clearly understand this complex grading system and its use as a variable in this study.

(6) ROPV_Avg. This study measures reviewing officer relative value by using the ROCV method developed by Reynolds (2011). The ROPV_Avg variable used in this study is a variation of the ROCV method developed by Reynolds. This variable measures the reviewing officer relative value "at processing" instead of "cumulative" like Reynolds uses. The ROPV_Avg is the average of the averages of all FITREPs of an officer in the sample. The reviewing officer average is based on a 1 to 8 scale, with 1 as "unsatisfactory" on the bottom and 8 as "the eminently qualified Marine" at the very top. As explained by Reynolds, "the resulting ROCV numeric yields a "distance from" or "tree levels" above/below the RO's average value on the comparative assessment tree." Appendix G shows how this scale looks on a FITREP and Appendices J and K display Reynolds' method for calculating this score. Similar to the RV_Pro_Avg, this variable

represents the average of the averages on the date that the FITREP was processed and remains constant over time on an officer's MBS.

(7) ROCV_Avg. This variable is modeled exactly after Reynolds' way of measuring ROCV as explained by Appendices J and K. It measures the reviewing officer "cumulative" relative value. It uses the same equation and grading scale as the ROPV_Avg except that this variable changes over time and looks at how an officer's score holds up over time when the reviewing officer grades other officers of the same rank. This variable has the same downside as the RV_Cum_Avg in that the scores in the data of this study do not reflect the scores seen by a particular board when making the decision to select or not select a Marine officer for CD. The scores for this variable are also from the same MMSB data pull of February 2014.

As is the case with data in the other categories, the performance category also has missing data. The missing data results in the following missing observations out of the 6,732 total: 25 in GCT_Total, 111 in PFT, 583 in CFT, 14 in Rifle, 8 in Pistol, 22 in Water Qualification, 69 in RV_Pro_Avg, and 13 in RV_Cum_Avg. The descriptive statistics for the performance variables for officers selected and not selected for career designation are illustrated in Tables 21 and 22.

Table 21. Performance Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
GCT_Total***	4708	123.369	9.495	75	157
PFT***	4667	274.586	19.194	163	300
CFT***	4253	292.473	8.996	231	300
Rifle_Exp**	4712	0.715	0.451	0	1
Rifle_Sharp***	4712	0.221	0.415	0	1
Rifle_Marks**	4712	0.062	0.241	0	1
Rifle_Unq***	4712	0.001	0.039	0	1
Pistol_Exp***	4716	0.364	0.481	0	1
Pistol_Sharp	4716	0.445	0.497	0	1
Pistol_Marks***	4716	0.190	0.392	0	1
Pistol_Unq	4716	0.001	0.029	0	1
Water_Unq	4706	0.001	0.025	0	1
Water_Qualified	4706	0.985	0.123	0	1
Water_Greater	4706	0.015	0.120	0	1
Adverse_Rpt***	4723	0.005	0.071	0	1
RV_Pro_Avg***	4674	92.204	4.243	80	100
RV_Pro_Upper***	4723	0.398	0.490	0	1
RV_Pro_Middle	4723	0.497	0.500	0	1
RV_Pro_Lower***	4723	0.095	0.293	0	1
RV_Cum_Avg***	4716	90.747	3.477	80	100
RV_Cum_Upper***	4723	0.229	0.420	0	1
RV_Cum_Middle***	4723	0.644	0.479	0	1
RV_Cum_Lower***	4723	0.125	0.331	0	1
ROPV_Avg***	4723	0.490	0.784	-1.567	6.000
ROCV_Avg***	4723	0.071	0.479	-1.530	2.676
Personal_Awards***	4723	1.320	1.669	0	28
Other_Awards***	4723	7.441	5.598	0	54
Foreign_Language***	4723	0.287	1.287	0	30
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
GCT_Total***	1999	121.581	9.659	90	157
PFT***	1954	270.483	22.034	144	300
CFT***	1896	290.256	10.622	221	300
Rifle_Exp**	2006	0.689	0.463	0	1
Rifle_Sharp***	2006	0.257	0.437	0	1
Rifle_Marks**	2006	0.048	0.214	0	1
Rifle_Unq***	2006	0.005	0.074	0	1
Pistol_Exp***	2008	0.327	0.469	0	1

Pistol_Sharp	2008	0.426	0.495	0	1
Pistol_Marks***	2008	0.246	0.431	0	1
Pistol_Unq	2008	0.001	0.039	0	1
Water_Unq	2004	0.001	0.039	0	1
Water_Qualified	2004	0.981	0.136	0	1
Water_Greater	2004	0.017	0.131	0	1
Adverse_Rpt***	2009	0.095	0.293	0	1
RV_Pro_Avg***	1989	88.055	4.077	80	100
RV_Pro_Upper***	2009	0.098	0.297	0	1
RV_Pro_Middle	2009	0.514	0.500	0	1
RV_Pro_Lower***	2009	0.378	0.485	0	1
RV_Cum_Avg***	2003	87.018	3.266	80	100
RV_Cum_Upper***	2009	0.033	0.180	0	1
RV_Cum_Middle***	2009	0.481	0.500	0	1
RV_Cum_Lower***	2009	0.483	0.500	0	1
ROPV_Avg***	2009	-0.102	0.846	-2.896	3.833
ROCV_Avg***	2009	-0.503	0.500	-2.942	1.904
Personal_Awards***	2009	0.629	0.848	0	5
Other_Awards***	2009	6.574	4.096	0	39
Foreign_Language***	2009	0.402	1.655	0	38
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 22. Performance Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
GCT_Total***	2461	123.040	9.333	87	157
PFT***	2437	275.238	18.628	188	300
CFT***	2438	294.579	7.043	241	300
Rifle_Exp	2461	0.742	0.438	0	1
Rifle_Sharp**	2461	0.217	0.412	0	1
Rifle_Marks	2461	0.040	0.197	0	1
Rifle_Unq**	2461	0.001	0.029	0	1
Pistol_Exp**	2467	0.358	0.480	0	1
Pistol_Sharp	2467	0.452	0.498	0	1
Pistol_Marks***	2467	0.190	0.392	0	1
Pistol_Unq	2467	0.000	0.020	0	1
Water_Unq	2459	0.001	0.035	0	1
Water_Qualified	2459	0.986	0.117	0	1
Water_Greater	2459	0.013	0.112	0	1
Adverse_Rpt***	2468	0.006	0.080	0	1

RV_Pro_Avg***	2445	92.222	4.205	80	100
RV_Pro_Upper	2468	0.393	0.489	0	1
RV_Pro_Middle***	2468	0.502	0.500	0	1
RV_Pro_Lower***	2468	0.096	0.294	0	1
RV_Cum_Avg***	2465	90.814	3.434	80	100
RV_Cum_Upper***	2468	0.230	0.421	0	1
RV_Cum_Middle***	2468	0.655	0.476	0	1
RV_Cum_Lower***	2468	0.114	0.318	0	1
ROPV_Avg***	2468	0.432	0.766	-1.567	4.321
ROCV_Avg***	2468	0.068	0.472	-1.420	2.676
Personal_Awards***	2468	1.203	1.471	0	11
Other_Awards***	2468	7.586	5.775	0	47
Foreign_Language**	2468	0.280	1.252	0	21
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
GCT_Total***	1376	121.745	9.761	90	151
PFT***	1343	271.145	22.468	144	300
CFT***	1357	291.788	9.565	221	300
Rifle_Exp	1379	0.719	0.449	0	1
Rifle_Sharp**	1379	0.246	0.431	0	1
Rifle_Marks	1379	0.031	0.174	0	1
Rifle_Unq**	1379	0.004	0.060	0	1
Pistol_Exp**	1381	0.322	0.467	0	1
Pistol_Sharp	1381	0.445	0.497	0	1
Pistol_Marks***	1381	0.231	0.422	0	1
Pistol_Unq	1381	0.001	0.038	0	1
Water_Unq	1379	0.002	0.047	0	1
Water_Qualified	1379	0.984	0.125	0	1
Water_Greater	1379	0.014	0.117	0	1
Adverse_Rpt***	1382	0.088	0.283	0	1
RV_Pro_Avg***	1365	88.343	4.091	80	100
RV_Pro_Upper	1382	0.115	0.319	0	1
RV_Pro_Middle***	1382	0.525	0.500	0	1
RV_Pro_Lower***	1382	0.348	0.477	0	1
RV_Cum_Avg***	1376	87.305	3.382	80	100
RV_Cum_Upper***	1382	0.044	0.205	0	1
RV_Cum_Middle***	1382	0.514	0.500	0	1
RV_Cum_Lower***	1382	0.438	0.496	0	1
ROPV_Avg***	1382	-0.094	0.845	-2.896	3.833
ROCV_Avg***	1382	-0.460	0.502	-2.942	1.904
Personal_Awards***	1382	0.623	0.842	0	5
Other_Awards***	1382	6.616	4.189	0	39
Foreign_Language**	1382	0.403	1.708	0	38
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

The performance category includes several variables that will help answer the physical fitness and relative value significance secondary research questions of the study. In this category, the variable with the largest marginal difference between selected and not selected officers is the Adverse_Rpt variable. The Adverse_Rpt variable on Table 21 shows that only .5 percent (24 officers) out of the 4,723 that were selected for career designation had an adverse fitness report, while 9.5 percent (190 officers) out of the 2,009 not selected had an adverse fitness report. Another variable with a wide margin was the RV_Pro_Avg. Table 21 showing selected officers with an RV_Pro_Avg of 92.2 while not selected officers show an average of 88.1. ROPV_Avg also had a sizable marginal difference between selected and not selected officers. Table 21 shows selected officers with a ROPV_Avg of 0.490 points above the reviewing officer's average, while not selected officers show a ROPV_Avg of -0.102 points below the reviewing officer's average.

e. Experience

The experience category isolates the effect of certain billet descriptions and combat deployment experience on selection to CD. Although there are many billets described in the dataset, this study will only look at the effects of having commander or executive officer in the billet description area of the FITREP. Billet_Cmdr is a continuous variable and sums up the amount of times an officer had the words commander, command, cmdr, or co in an observed FITREP. Billet_XO is also a continuous variable and it sums up the amount of times an officer had the words executive or xo in an observed FITREP.

The experience category also includes three binary variables to account for combat deployments on an officer's personal record. The variables are self-explanatory and they take on a value of 1 if that officer had one, two, or three-plus deployments in his officer's record and a value of 0 if not. The descriptive statistics for the experience category of officers selected and not selected for CD are illustrated in Tables 23 and 24.

Table 23. Experience Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY10 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Billet_Cmdr***	4723	1.521	1.914	0	9
Billet_XO	4723	0.330	0.753	0	5
Cmbt_Deployment**	4723	0.555	0.497	0	1
Cmbt_Deployment2	4723	0.205	0.404	0	1
Cmbt_Deployment3_Plus***	4723	0.039	0.193	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Billet_Cmdr***	2009	1.794	1.945	0	8
Billet_XO	2009	0.311	0.762	0	6
Cmbt_Deployment**	2009	0.582	0.493	0	1
Cmbt_Deployment2	2009	0.191	0.393	0	1
Cmbt_Deployment3_Plus***	2009	0.021	0.143	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Table 24. Experience Descriptive Statistics for Officers Selected and Not Selected for Career Designation during FY12 Round 1 through FY13 Round 2 Boards

Officers Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Billet_Cmdr***	2468	1.409	1.896	0	9
Billet_XO	2468	0.271	0.680	0	5
Cmbt_Deployment	2468	0.560	0.497	0	1
Cmbt_Deployment2	2468	0.157	0.364	0	1
Cmbt_Deployment3_Plus***	2468	0.042	0.201	0	1
Officers Not Selected					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Billet_Cmdr***	1382	1.740	1.904	0	8
Billet_XO	1382	0.292	0.730	0	6
Cmbt_Deployment	1382	0.577	0.494	0	1
Cmbt_Deployment2	1382	0.169	0.375	0	1
Cmbt_Deployment3_Plus***	1382	0.018	0.133	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

As seen on Tables 23 and 24, the descriptive statistics for the variables in the experience category do not show a significant margin of difference between selected and not selected officers. Chapter V will illustrate the true effects of those variables on CD and will show if any of those variables are significant in predicting selection. A correlation matrix of some of the independent variables is provided in Figure 2.

	ENLPGM	NROTC	OCC	PLC	USNA	RV_Pro~g	RV_Cum~g	ROPV_Avg	ROCV_Avg	Cmbt_D~t	Cmbt_D~2	Cmbt_D~s
ENLPGM	1.0000											
	6627											
NROTC	-0.1400	1.0000										
	0.0000											
	6627	6627										
OCC	-0.2231	-0.2700	1.0000									
	0.0000	0.0000										
	6627	6627	6627									
PLC	-0.2174	-0.2632	-0.4195	1.0000								
	0.0000	0.0000	0.0000									
	6627	6627	6627	6627								
USNA	-0.1486	-0.1799	-0.2868	-0.2795	1.0000							
	0.0000	0.0000	0.0000	0.0000								
	6627	6627	6627	6627	6627							
RV_Pro_Avg	0.1285	0.0259	-0.0158	-0.1089	0.0233	1.0000						
	0.0000	0.0361	0.2015	0.0000	0.0592							
	6559	6559	6559	6559	6559	6663						
RV_Cum_Avg	0.1636	0.0236	-0.0273	-0.1242	0.0292	0.8220	1.0000					
	0.0000	0.0549	0.0267	0.0000	0.0174	0.0000						
	6614	6614	6614	6614	6614	6662	6719					
ROPV_Avg	0.1567	-0.0029	-0.0026	-0.1030	0.0033	0.4445	0.4716	1.0000				
	0.0000	0.8145	0.8302	0.0000	0.7872	0.0000	0.0000					
	6627	6627	6627	6627	6627	6663	6719	6732				
ROCV_Avg	0.1608	0.0201	-0.0223	-0.1259	0.0307	0.5922	0.6538	0.7039	1.0000			
	0.0000	0.1022	0.0690	0.0000	0.0123	0.0000	0.0000	0.0000				
	6627	6627	6627	6627	6627	6663	6719	6732	6732			
Cmbt_Deplo~t	-0.0851	0.0298	0.0087	0.0123	0.0160	0.0168	0.0109	-0.0081	-0.0065	1.0000		
	0.0000	0.0152	0.4770	0.3181	0.1929	0.1696	0.3722	0.5050	0.5939			
	6627	6627	6627	6627	6627	6663	6719	6732	6732	6732		
Cmbt_Deplo~2	0.0664	-0.0214	-0.0113	-0.0179	0.0015	0.0028	-0.0213	-0.0217	-0.0149	-0.5696	1.0000	
	0.0000	0.0818	0.3597	0.1460	0.9025	0.8215	0.0811	0.0745	0.2217	0.0000		
	6627	6627	6627	6627	6627	6663	6719	6732	6732	6732	6732	
Cmbt_Deplo~s	0.2142	-0.0569	-0.0502	-0.0236	-0.0315	0.0390	0.0368	0.0524	0.0460	-0.2107	-0.0930	1.0000
	0.0000	0.0000	0.0000	0.0551	0.0103	0.0014	0.0025	0.0000	0.0002	0.0000	0.0000	
	6627	6627	6627	6627	6627	6663	6719	6732	6732	6732	6732	6732

Figure 2. Correlation Matrix

D. CHAPTER SUMMARY

This chapter described the data extracted from MMOA, TFDW, and MMSB. The final dataset consists of one dependent variable and 96 independent variables in the five categories of demographics, commissioning, military occupational specialty, performance, and experience. The variables were used to examine the effect they would have on selection to CD. Table 25 summarizes the comparison between the Means of those officers selected against those officers not selected for CD. The table contains the difference in terms of positive and negative numbers. A positive number for the difference column represents that the Mean value for the selected officer sample was higher than the Mean value of the not selected officer sample. A negative difference number for the sample displays the opposite effect.

Table 25. Mean Comparison of Selected and Not Selected Officers for Career Designation

	All Boards Mean Values			FY12 Rd 1 through FY13 Rd 2 Board Mean Values		
Variables	**Selected**	**Not Selected**	**Difference**	**Selected**	**Not Selected**	**Difference**
Demographics						
Dependents	0.858	0.601	0.257***	0.878	0.597	0.281***
Years_Comm_Serv	3.505	3.206	0.299***	3.544	3.213	0.331***
Years_Total_Serv	5.706	4.875	0.831***	5.773	4.849	0.924***
Prior_Enlisted	0.160	0.093	0.067***	0.166	0.089	0.077***
Female	0.080	0.066	0.014*	0.075	0.066	0.009
White	0.825	0.791	0.034***	0.819	0.789	0.030**
Black	0.035	0.047	-0.012**	0.032	0.047	-0.015**
Hispanic	0.060	0.075	-0.015**	0.058	0.071	-0.013
Other_Race	0.079	0.088	-0.009	0.092	0.093	-0.002
Married	0.530	0.417	0.113***	0.542	0.417	0.125***
Greater_College	0.029	0.023	0.006	0.037	0.027	0.009
College	0.943	0.936	0.007	0.919	0.922	-0.002
Less_College	0.029	0.041	-0.012***	0.044	0.051	-0.007
Commissioning						
ENLPGM	0.122	0.060	0.062***	0.129	0.059	0.070***
NROTC	0.147	0.140	0.007	0.132	0.132	0.000
OCC	0.294	0.317	-0.023*	0.324	0.319	0.005

PLC	0.277	0.320	-0.043***	0.284	0.321	-0.037**
USNA	0.159	0.164	-0.005	0.131	0.169	-0.038***
Military Occupational Specialty						
Combat_Arms_MOS	0.257	0.319	-0.062***	0.242	0.317	-0.075***
MOS_0302	0.613	0.663	-0.050***	0.559	0.616	-0.058***
MOS_0802	0.296	0.278	0.018*	0.329	0.311	0.019**
MOS_1802	0.035	0.034	0.001	0.047	0.046	0.001
MOS_1803	0.056	0.025	0.031**	0.065	0.027	0.038*
CSS_MOS	0.439	0.550	-0.111***	0.409	0.537	-0.128***
MOS_0180	0.065	0.066	-0.001*	0.072	0.063	0.009
MOS_0202	0.003	0.008	-0.005**	0.001	0.012	-0.011***
MOS_0203	0.085	0.067	0.018	0.090	0.071	0.019
MOS_0204	0.024	0.014	0.010	0.022	0.013	0.008
MOS_0206	0.039	0.031	0.008	0.038	0.035	0.003
MOS_0207	0.055	0.034	0.021	0.047	0.036	0.010
MOS_0402	0.270	0.276	-0.006***	0.248	0.274	-0.026***
MOS_0602	0.171	0.171	0.000***	0.162	0.151	0.011*
MOS_1302	0.096	0.095	0.001*	0.097	0.102	-0.005**
MOS_3002	0.089	0.117	-0.028***	0.107	0.104	0.003*
MOS_3404	0.032	0.043	-0.011***	0.039	0.057	-0.018***
MOS_4302	0.024	0.028	-0.004*	0.028	0.032	-0.005
MOS_5803	0.046	0.049	-0.003*	0.050	0.049	0.002
Air_Grd_MOS	0.081	0.107	-0.026***	0.087	0.114	-0.027***
MOS_6002	0.209	0.210	-0.001	0.229	0.248	-0.019*
MOS_6602	0.175	0.121	0.054	0.182	0.121	0.061
MOS_7204	0.092	0.075	0.017	0.084	0.051	0.033
MOS_7208	0.249	0.369	-0.120***	0.243	0.357	-0.114***
MOS_7210	0.139	0.112	0.027	0.136	0.102	0.034
MOS_7220	0.136	0.112	0.024	0.126	0.121	0.005
Law_MOS	0.025	0.008	0.017***	0.038	0.012	0.027***
MOS_4402	1.000	1.000	0.000***	1.000	1.000	0.000***
Air_MOS	0.198	0.017	0.181***	0.224	0.021	0.203***
MOS_7507	0.001	0.057	-0.056	0.002	0.069	-0.067
MOS_7509	0.078	0.114	-0.036***	0.071	0.138	-0.067***
MOS_7521	0.003	0.000	0.003	0.005	0.000	0.005
MOS_7523	0.100	0.029	0.071***	0.085	0.034	0.051***
MOS_7525	0.040	0.000	0.040***	0.020	0.000	0.020***
MOS_7532	0.081	0.000	0.081***	0.105	0.000	0.105***
MOS_7543	0.012	0.000	0.012**	0.009	0.000	0.009*
MOS_7556	0.043	0.057	-0.014***	0.047	0.069	-0.022***

MOS_7557	0.032	0.000	0.032***	0.029	0.000	0.029***
MOS_7558	0.001	0.000	0.001	0.000	0.000	0.000
MOS_7560	0.008	0.000	0.008*	0.005	0.000	0.005
MOS_7561	0.008	0.000	0.008*	0.005	0.000	0.005
MOS_7562	0.091	0.086	0.005***	0.085	0.034	0.051***
MOS_7563	0.114	0.057	0.057***	0.112	0.069	0.043***
MOS_7564	0.004	0.000	0.004	0.000	0.000	0.000
MOS_7565	0.159	0.200	-0.041***	0.174	0.241	-0.067***
MOS_7566	0.169	0.200	-0.031***	0.179	0.103	0.076***
MOS_7567	0.002	0.000	0.002	0.002	0.000	0.002
MOS_7568	0.016	0.200	-0.184	0.022	0.241	-0.220
MOS_7588	0.035	0.000	0.035***	0.038	0.000	0.038***
MOS_7599	0.003	0.000	0.003	0.004	0.000	0.004
Performance						
GCT_Total	123.369	121.581	1.788***	123.040	121.745	1.295***
PFT	274.586	270.483	4.103***	275.238	271.145	4.093***
CFT	292.473	290.256	2.217***	294.579	291.788	2.791***
Rifle_Exp	0.715	0.689	0.026**	0.742	0.719	0.023
Rifle_Sharp	0.221	0.257	-0.036***	0.217	0.246	-0.029**
Rifle_Marks	0.062	0.048	0.014**	0.040	0.031	0.009
Rifle_Unq	0.001	0.005	-0.004***	0.001	0.004	-0.003**
Pistol_Exp	0.364	0.327	0.037***	0.358	0.322	0.036**
Pistol_Sharp	0.445	0.426	0.019	0.452	0.445	0.006
Pistol_Marks	0.190	0.246	-0.056***	0.190	0.231	-0.041***
Pistol_Unq	0.001	0.001	0.000	0.000	0.001	-0.001
Water_Unq	0.001	0.001	0.000	0.001	0.002	-0.001
Water_Qualified	0.985	0.981	0.004	0.986	0.984	0.002
Water_Greater	0.015	0.017	-0.002	0.013	0.014	-0.001
Adverse_Rpt	0.005	0.095	-0.090***	0.006	0.088	-0.081***
RV_Pro_Avg	92.204	88.055	4.149***	92.222	88.343	3.878***
RV_Pro_Upper	0.398	0.098	0.300***	0.393	0.115	0.278***
RV_Pro_Middle	0.497	0.514	-0.017	0.502	0.525	-0.023
RV_Pro_Lower	0.095	0.378	-0.283***	0.096	0.348	-0.252***
RV_Cum_Avg	90.747	87.018	3.729***	90.814	87.305	3.509***
RV_Cum_Upper	0.229	0.033	0.196***	0.230	0.044	0.186***
RV_Cum_Middle	0.644	0.481	0.163***	0.655	0.514	0.141***
RV_Cum_Lower	0.125	0.483	-0.358***	0.114	0.438	-0.324***
ROPV_Avg	0.490	-0.102	0.592***	0.432	-0.094	0.526***
ROCV_Avg	0.071	-0.503	0.574***	0.068	-0.460	0.528***
Personal_Awards	1.320	0.629	0.691***	1.203	0.623	0.580***

Other_Awards	7.441	6.574	0.867***	7.586	6.616	0.971***
Foreign_Language	0.287	0.402	-0.115***	0.280	0.403	-0.123**
Experience						
Billet_Cmdr	1.521	1.794	-0.273***	1.409	1.740	-0.330***
Billet_XO	0.330	0.311	0.019	0.271	0.292	-0.021
Cmbt_Deployment	0.555	0.582	-0.027**	0.560	0.577	-0.017
Cmbt_Deployment2	0.205	0.191	0.014	0.157	0.169	-0.013
Cmbt_Deployment3_Plus	0.039	0.021	0.018***	0.042	0.018	0.024***
*** Significant at 1%; ** Significant at 5%; * Significant at 10%						

V. MODELS AND RESULTS

A. OVERVIEW

The preliminary statistical analysis of Chapter IV has only limited explanatory power in answering the study's primary and secondary research questions. CD probability was examined with respect to only one independent variable, or category of variables, such as demographics, commissioning, MOS, performance, or experience, at a time. While that approach is helpful in understanding the relationships between the proposed selection predictors, it does not examine the full effect of those predictors while holding other variables constant. Eligible officers are actually selected for CD based upon the collective effect of all of their individual qualifications. To examine the effects of a multitude of variables at the same time, multivariate statistical models are used in an attempt to estimate the collective effect of all the independent variables on the likelihood for CD selection.

B. THEORETICAL MODEL

The Probit model is the multivariate statistical model used to estimate the effects of the independent variables on the dependent variable of Selected. The Probit model is considered a binary response model and was chosen because the dependent variable is binary, which takes on a value of 1 if selected for CD and a value of 0 if not selected. The dependent variable of Selected is expressed in terms of the probability of the binary response, dependent upon the function of the independent variables. According to Wooldridge (2009), the Probit model is based on the normal distribution of the cumulative distribution function (CDF), which coupled with the binary response dependent variable, provides the maximum likelihood estimation (MLE) dependent upon the distribution of *y* given *x* (Wooldridge, 2009, p. 578). The "dProbit" command is used in the regression to report the actual marginal effects of an independent variable. Partial effects of each independent variable are estimated for interpretation of the selection effect of each independent variable. Figure 3 illustrates the Probit model. The dependent variable of Selected is represented by the symbol *y* within the figure. *x* is a vector of

independent variables and β is a vector of the independent variables coefficient. The independent variables are from the following five categories: demographics, commissioning, military occupational specialty, performance, and experience.

Binary Response Probit Model:

$$P(\mathrm{y}=1 \mid x)=G(\beta_0+\beta x)$$

Function of the Probit Model, the Normal CDF:

$$G(z)=\Phi(z)$$

Figure 3. Probit Model (from Wooldridge, 2009)

C. ECONOMETRIC MODELS

As previously stated, the selection factors or independent variables are organized into the five categories explained in Chapter IV and serve as the model's explanatory variables expressed as a function of the normal CDF. Figure 4 illustrates the basic econometric models with the dependent variable of Selected and the five categories of explanatory variables.

Model 1: $P(\textbf{Selected})=G(\beta_0+\beta_1\ \textbf{demographics})$

Model 2: $P(\textbf{Selected})=G(\beta_0+\beta_1\ \textbf{demographics}+\beta_2\ \textbf{commissioning})$

Model 3: $P(\textbf{Selected})=G(\beta_0+\beta_1\ \textbf{demographics}+\beta_2\ \textbf{commissioning}+\beta_3\ \textbf{MOS})$

Model 4: $P(\textbf{Selected})=G(\beta_0+\beta_1\ \textbf{demographics}+\beta_2\ \textbf{commissioning}+\beta_3\ \textbf{MOS}+\beta_4\ \textbf{performance})$

Model 5: $P(\textbf{Selected})=G(\beta_0+\beta_1\ \textbf{demographics}+\beta_2\ \textbf{commissioning}+\beta_3\ \textbf{MOS}+\beta_4\ \textbf{performance}+\beta_5\ \textbf{experience})$

Figure 4. Econometric Models

As seen on Figure 4, the selection models were developed from the five categories of independent variables. The five categories were used to estimate the predicted probability of selection to CD. This was performed in a sequential order, starting with the independent variable category of demographics and progressing to the fifth category of experience. The addition of different independent variables categories was used to analyze the change in marginal effects across the five models. Such an addition to a model can cause the marginal effects of the variables to either increase or decrease in magnitude; moreover, it can also cause the variables to become statistically significant or have the reverse effect of becoming statistically insignificant at the 1 percent, 5 percent, or 10 percent level.

D. MODELS BY COMPETITIVE CATEGORY

As explained previously, the CD board is unique because it uses five competitive categories which are separated my MOS. The MOS categories are detailed in Figure 1 and are combat arms, combat service support, aviation-ground, law, and aviation. This results in five different selection boards within the same CD board. As such, a different set of models needs to be used for each separate competitive category. The combat arms, combat service support, aviation-ground, and aviation categories will use the same five models illustrated in Figure 4. The law competitive category only includes officers with a 4402 Judge Advocate MOS, so it is not practical to include MOS in its models. The law category will use the four models illustrated in Figure 5.

Model 1: $P(\textbf{Selected}) = G(\beta_0 + \beta_1\ \textbf{demographics})$

Model 2: $P(\textbf{Selected}) = G(\beta_0 + \beta_1\ \textbf{demographics} + \beta_2\ \textbf{commissioning})$

Model 3: $P(\textbf{Selected}) = G(\beta_0 + \beta_1\ \textbf{demographics} + \beta_2\ \textbf{commissioning} + \beta_3\ \textbf{performance})$

Model 4: $P(\textbf{Selected}) = G(\beta_0 + \beta_1\ \textbf{demographics} + \beta_2\ \textbf{commissioning} + \beta_3\ \textbf{performance} + \beta_4\ \textbf{experience})$

Figure 5. Econometric Models for Law Competitive Category

The base officer of the following models is described as follows:

- Zero Dependents
- Not Prior Enlisted
- Male
- White
- Unmarried
- College Degree
- United States Naval Academy Commissioning Source (OCC for Law Category)
- MOS for the Five Competitive Categories:
    1. **Combat Arms:** 0802, Field Artillery Officer
    2. **Combat Service Support:** 0180, Adjutant
    3. **Aviation-Ground:** 6002, Aircraft Maintenance Officer
    4. **Law:** MOS Omitted from Model
    5. **Aviation:** 7523, F/A-18 Qualified Pilot
- Rifle Expert
- Pistol Expert
- Water Qualified (Water Survival Class 1, 2, 3, 4, WSQ, Basic, Intermediate, or Advanced)
- In the Upper Third of "at processing" Relative Value Averages (RV_Pro_Upper)
- In the Upper Third of "cumulative" Relative Value Averages (RV_Cum_Upper)
- Zero Deployments

The results for the models are shown in Tables 26 through 35. The results in each table include the magnitude of the marginal effects, sign of the coefficient, standard errors, and statistical significance at the 1 percent, 5 percent, and 10 percent levels. All tests are two-tailed tests unless specified otherwise. A positive sign next to the marginal effects coefficient indicates that the variable increases the overall predicted probability of selection, while a negative sign has the opposite effect and decreases the overall predicted probability for selection.

1. Combat Arms Category Model Results FY10 Round 1 through FY13 Round 2

The results of the combat arms competitive category model change as more variables are added from the progression of model 1 through model 5 as seen on Table 26. Model 5, which includes all the independent variables, ends up with 21 out of 46 statistically significant variables spread among the 1 percent, 5 percent, and 10 percent levels of significance. It should be noted that the Female variable is automatically dropped from all the models in this category because there are no female observations in any of the combat arms MOSs in this dataset. Variables Pistol_Unq and Water_Unq are also dropped from models 4 and 5 due to those variables perfectly predicting success in the models. Those two variables along with missing observations throughout the addition of the variables categories result in a drop of 247 observations from model 1 through model 5.

Table 26. Combat Arms Category Model Results FY10 Round 1 through FY13 Round 2

Combat Arms Competitive Category					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	0.0076	0.0021	0.0026	0.0184	0.0204
	(0.0229)	(0.0236)	(0.0237)	(0.0297)	(0.0299)
Years_Comm_Serv	-0.0743***	-0.0872***	-0.0861***	0.0192	0.0107
	(0.0218)	(0.0223)	(0.0224)	(0.0270)	(0.0268)
Years_Total_Serv	0.0030	0.0239***	0.0234***	0.0218*	0.0261**
	(0.0072)	(0.0090)	(0.0090)	(0.0129)	(0.0129)
Prior_Enlisted	0.1187**	-0.2748**	-0.2663**	-0.1913	-0.1904
	(0.0586)	(0.1082)	(0.1091)	(0.1578)	(0.1586)
Black	-0.0677	-0.0909	-0.0893	0.0419	0.0276
	(0.0702)	(0.0731)	(0.0731)	(0.0763)	(0.0782)
Hispanic	0.0363	0.0670	0.0629	0.0774	0.0741
	(0.0522)	(0.0518)	(0.0523)	(0.0599)	(0.0582)
Other_Race	-0.0612	-0.0707	-0.0714	0.0283	0.0382
	(0.0476)	(0.0485)	(0.0486)	(0.0549)	(0.0534)
Married	0.0616*	0.0631*	0.0608	0.0266	0.0138
	(0.0370)	(0.0375)	(0.0376)	(0.0484)	(0.0487)
Greater_College	-0.1748*	-0.1941**	-0.1984**	-0.1426	-0.1190
	(0.0957)	(0.0990)	(0.0996)	(0.1430)	(0.1398)

Less_College	0.0119 (0.0616)	0.0191 (0.0626)	0.0207 (0.0627)	0.0384 (0.0745)	0.0408 (0.0726)
Commissioning					
ENLPGM		0.2643*** (0.0516)	0.2564*** (0.0541)	0.1975*** (0.0678)	0.1964*** (0.0639)
NROTC		0.0179 (0.0387)	0.0123 (0.0390)	0.1157*** (0.0414)	0.1106*** (0.0414)
OCC		-0.0460 (0.0357)	-0.0542 (0.0360)	0.1049** (0.0415)	0.0952** (0.0418)
PLC		-0.1126*** (0.0386)	-0.1182*** (0.0388)	0.0706 (0.0468)	0.0647 (0.0466)
Military Occupational Specialty					
MOS_0302			-0.0255 (0.0254)	-0.0590* (0.0322)	-0.0353 (0.0459)
MOS_1802			-0.0282 (0.0689)	-0.0930 (0.0932)	-0.0689 (0.0968)
MOS_1803			0.1348*** (0.0503)	0.0842 (0.0639)	0.1371** (0.0563)
Performance					
GCT_TOTAL				0.0038** (0.0016)	0.0036** (0.0016)
PFT				0.0025** (0.0010)	0.0026** (0.0010)
CFT				-0.0037* (0.0020)	-0.0034* (0.0020)
Rifle_Sharp				-0.0226 (0.0367)	-0.0314 (0.0370)
Rifle_Marks				0.1207** (0.0535)	0.1149** (0.0526)
Rifle_Unq				-0.1838 (0.3211)	-0.1547 (0.3106)
Pistol_Sharp				0.0167 (0.0330)	0.0177 (0.0329)
Pistol_Marks				-0.0964** (0.0483)	-0.1004** (0.0487)
Water_Greater				0.2330*** (0.0315)	0.2292*** (0.0295)
Adverse_Rpt				-0.6041*** (0.0804)	-0.6227*** (0.0783)
RV_Pro_Avg				0.0152* (0.0092)	0.0167* (0.0092)
RV_Pro_Middle				-0.0333 (0.0600)	-0.0343 (0.0597)
RV_Pro_Lower				-0.2032* (0.1151)	-0.2009* (0.1156)
RV_Cum_Avg				0.0436*** (0.0111)	0.0423*** (0.0110)
RV_Cum_Middle				0.0816	0.0769

				(0.0912)	(0.0925)
RV_Cum_Lower				0.1602*	0.1514
				(0.0944)	(0.0956)
ROPV_Avg				0.0644	0.0625
				(0.0465)	(0.0463)
ROCV_Avg				0.4417***	0.4479***
				(0.0621)	(0.0622)
Personal_Awards				0.0669***	0.0523***
				(0.0166)	(0.0169)
Other_Awards				-0.0018	-0.0082
				(0.0064)	(0.0068)
Foreign_Language				-0.0146	-0.0133
				(0.0168)	(0.0167)
Experience					
Billet_Cmdr					-0.0107
					(0.0111)
Billet_XO					0.0331*
					(0.0173)
Cmbt_Deployment					0.1777***
					(0.0505)
Cmbt_Deployment2					0.1530***
					(0.0460)
Cmbt_Deployment3_Plus					0.1891***
					(0.0494)
Observations	1,827	1,802	1,802	1,580	1,580
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

a. Demographics Results

The demographics variables category is interesting because it shows the pattern followed by the other competitive categories in which several variables start off as statistically significant, but eventually reduce in significance as more variables are added. In the combat arms category, all but one of the demographics variables became insignificant as more variables are added in models 4 and 5. The only variable to remain statistically significant at the 5 percent level was the Years_Total_Serv variable. The 0.0261 marginal effects coefficient means that on average and while holding all else constant, an officer with one more year of total service than the average, has a 2.6 percentage points (ppts) higher likelihood of being selected for CD.

b. Commissioning Results

The commissioning source category has three out of four statistically significant variables. The ENLPGM variable is of particular interest to this study because it helps answer two of the five secondary research questions. While the Prior_Enlisted variable in the demographics category proved to be statistically insignificant, the ENLPGM category is statistically significant at the 1 percent level. As previously discussed, the ENLPGM variable is composed of officers who were commissioned through one of the enlisted to officer programs while leaving out the O-2E and O-3E grade designators that the Prior_Enlisted variable uses. The 0.1964 marginal effects coefficient means that on average and while holding all else constant, an officer who was commissioned through an enlisted to officer program has a 19.6 ppts higher probability of being selected than an officer who was commissioned through the USNA. The answer to both secondary research questions of prior enlisted service and commissioning source increasing the likelihood for selection is yes.

c. MOS Results

The MOS category, while not one of the research questions, shows that when compared to a 0802 Artillery Officer, an 1803 Assault Amphibious Vehicle Officer has a 13.7 ppts higher probability of being selected. That variable is significant at the 5 percent level.

d. Performance Results

The performance variables category has the most (12 out of 23) statistically significant variables in predicting selection of the combat arms competitive category. This performance category includes several variables of interest that also help answer two of the five secondary research questions, which include the PFT/CFT and FITREP questions. The PFT and CFT are statistically significant at the 5 and 10 percent levels, respectively. They only have, however, a minor marginal effect on the dependent variable. One more point than the average on the PFT increases the likelihood of selection by .26 ppts and one more point on the CFT decreases the likelihood by .34 ppts. While only having a low negative effect, the CFT variable result is somewhat surprising

given the amount of emphasis the Marine Corps places on physical fitness. It should be noted that the overall average CFT score for selected officers was 292 out of 300 as shown in Table 21, which serves as an indicator that the USMC does value high levels of physical fitness. The answer to the secondary research question of does a higher score on physical fitness events increase the likelihood for selection is yes for PFT and no for CFT.

Another somewhat surprising result of this category is the result of the rifle marksmanship variables. Compared to an officer who is an expert on rifle marksmanship (Rifle_Exp), an officer qualified as a rifle marksman (Rifle_Marks) has an 11.5 ppts higher probability of being selected for CD. Rifle marksman is the lowest out of the three marksmanship categories. This result is surprising because of the emphasis placed on marksmanship with the *"every marine a rifleman"* motto of the Marine Corps. The Rifle_Marks result remains significant and similar throughout the combat service support and aviation-ground competitive categories.

The RV_Pro_Lower, RV_Cum_Avg, and ROCV_Avg variables help answer the secondary research question regarding FITREP performance effect on CD. In the combat arms category, higher than average performance on a FITREP does seem to have an increase in the likelihood for selection. The negative marginal effects coefficient on RV_Pro_Lower means that when compared to an officer with an RV_Pro_Upper (93.34–100), an officer with an RV_Pro_Lower (80.00 – 86.66) has a 20.1 ppts lower likelihood of being selected for CD. The marginal effects coefficient on RV_Cum_Avg means that an officer with one point higher than the average on RV_Cum_Avg has a 4.2 ppts higher probability of being selected. The ROCV_Avg coefficient means that an officer who is scored one point higher on the reviewing officer's cumulative value average as measured by the ROCV, has a 44.8 ppts higher probability of being selected for CD.

e. Experience Results

The experience category contains four out of five statistically significant independent variables. This category also helps answer the final secondary research question on the effects of combat deployments on the dependent variable. When

compared to an officer who has zero deployments, officers who have one, two, and three-plus combat deployments have a 17.8, 15.3, and 18.9 ppts, respectively, higher probability of getting selected for CD. Those three results are significant at the 1 percent level.

2. CSS Category Model Results FY10 Round 1 through FY13 Round 2

The results of the combat service support competitive category model also change as more variables are added from the progression of model 1 through model 5 as seen on Table 27. Model 5, which includes all the independent variables, ends up with 25 out of 55 statistically significant variables spread among the 1 percent, 5 percent, and 10 percent levels of significance. The Pistol_Unq variable is also dropped in this category from models 4 and 5 due to it perfectly predicting success in the models. That one variable along with missing observations throughout the addition of the variables categories result in a drop of 408 observations from model 1 through model 5.

Table 27. Combat Service Support Category Model Results FY10 Round 1 through FY13 Round 2

Combat Service Support Competitive Category					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	0.0124	0.0148	0.0187	0.0233	0.0293*
	(0.0127)	(0.0132)	(0.0133)	(0.0171)	(0.0172)
Years_Comm_Serv	-0.0939***	-0.1014***	-0.1018***	0.0070	-0.0030
	(0.0155)	(0.0165)	(0.0168)	(0.0219)	(0.0222)
Years_Total_Serv	0.0055	0.0094*	0.0097*	0.0034	0.0067
	(0.0048)	(0.0055)	(0.0055)	(0.0080)	(0.0081)
Prior_Enlisted	0.1426***	0.0324	0.0351	0.0368	0.0410
	(0.0368)	(0.0565)	(0.0566)	(0.0746)	(0.0745)
Female	0.1083***	0.0945***	0.1119***	0.0760**	0.0798**
	(0.0244)	(0.0257)	(0.0258)	(0.0340)	(0.0339)
Black	-0.1332***	-0.1464***	-0.1284***	-0.0305	-0.0302
	(0.0433)	(0.0444)	(0.0446)	(0.0555)	(0.0555)
Hispanic	-0.1333***	-0.1434***	-0.1290***	-0.0962**	-0.1032**

	(0.0348)	(0.0354)	(0.0357)	(0.0466)	(0.0473)
Other_Race	-0.0337	-0.0301	-0.0306	-0.0207	-0.0164
	(0.0304)	(0.0306)	(0.0308)	(0.0378)	(0.0379)
Married	0.0261	0.0197	0.0179	-0.0112	-0.0231
	(0.0244)	(0.0249)	(0.0250)	(0.0316)	(0.0318)
Greater_College	0.0142	0.0113	0.0243	-0.1075	-0.1181
	(0.0611)	(0.0626)	(0.0618)	(0.0934)	(0.0938)
Less_College	-0.0973**	-0.1064**	-0.1043**	-0.1908***	-0.1843***
	(0.0489)	(0.0507)	(0.0507)	(0.0633)	(0.0643)
Commissioning					
ENLPGM		0.1000*	0.1072**	0.1044	0.1089*
		(0.0518)	(0.0515)	(0.0660)	(0.0656)
NROTC		0.0287	0.0252	0.0779**	0.0797**
		(0.0315)	(0.0319)	(0.0357)	(0.0356)
OCC		-0.0050	-0.0036	0.1302***	0.1255***
		(0.0279)	(0.0280)	(0.0325)	(0.0326)
PLC		-0.0428	-0.0403	0.0922***	0.0887**
		(0.0302)	(0.0304)	(0.0353)	(0.0355)
MOS_0202			-0.0470	-0.2973	-0.3185*
			(0.1414)	(0.1878)	(0.1842)
MOS_0203			0.1163***	0.0583	0.0255
			(0.0405)	(0.0553)	(0.0592)
MOS_0204			0.1209**	0.0221	-0.0156
			(0.0592)	(0.0796)	(0.0847)
MOS_0206			0.0757	0.1156**	0.0561
			(0.0524)	(0.0588)	(0.0706)
MOS_0207			0.1218***	0.0443	0.0250
			(0.0450)	(0.0655)	(0.0681)
MOS_0402			0.0340	-0.0275	-0.0730
			(0.0377)	(0.0513)	(0.0546)
MOS_0602			0.0454	0.0183	-0.0148
			(0.0392)	(0.0519)	(0.0561)
MOS_1302			0.0561	-0.0072	-0.0664
			(0.0422)	(0.0585)	(0.0688)
MOS_3002			-0.0111	-0.0570	-0.0572
			(0.0447)	(0.0617)	(0.0620)
MOS_3404			-0.1060*	-0.1640**	-0.1666**
			(0.0615)	(0.0780)	(0.0784)
MOS_4302			-0.0184	-0.0489	-0.0504
			(0.0650)	(0.0848)	(0.0855)

MOS_5803			0.0176 (0.0518)	-0.0385 (0.0692)	-0.0792 (0.0765)
Performance					
GCT_TOTAL				0.0008 (0.0012)	0.0008 (0.0012)
PFT				0.0028*** (0.0006)	0.0026*** (0.0006)
CFT				-0.0005 (0.0012)	-0.0003 (0.0012)
Rifle_Sharp				0.0596** (0.0256)	0.0550** (0.0259)
Rifle_Marks				0.1205*** (0.0419)	0.1150*** (0.0424)
Rifle_Unq				-0.0362 (0.3350)	-0.0280 (0.3381)
Pistol_Sharp				-0.0539** (0.0263)	-0.0624** (0.0265)
Pistol_Marks				-0.0726** (0.0328)	-0.0677** (0.0330)
Water_Unq				-0.0575 (0.2856)	-0.0623 (0.2874)
Water_Greater				-0.0730 (0.1032)	-0.0494 (0.1027)
Adverse_Rpt				-0.6009*** (0.0620)	-0.6015*** (0.0618)
RV_Pro_Avg				0.0289*** (0.0065)	0.0289*** (0.0066)
RV_Pro_Middle				0.0581 (0.0445)	0.0631 (0.0447)
RV_Pro_Lower				0.0880 (0.0688)	0.0883 (0.0689)
RV_Cum_Avg				0.0371*** (0.0077)	0.0382*** (0.0077)
RV_Cum_Middle				0.1415*** (0.0511)	0.1456*** (0.0513)
RV_Cum_Lower				0.0822 (0.0704)	0.0904 (0.0698)
ROPV_Avg				-0.0141 (0.0169)	-0.0124 (0.0170)
ROCV_Avg				0.4059*** (0.0363)	0.4096*** (0.0366)

Personal_Awards				0.0582***	0.0523***
				(0.0142)	(0.0144)
Other_Awards				-0.0010	-0.0065
				(0.0040)	(0.0041)
Foreign_Language				0.0019	0.0028
				(0.0062)	(0.0062)
Experience					
Billet_Cmdr					0.0061
					(0.0080)
Billet_XO					0.0362*
					(0.0186)
Cmbt_Deployment					0.0602**
					(0.0304)
Cmbt_Deployment2					0.1596***
					(0.0322)
Cmbt_Deployment3_Plus					0.1374**
					(0.0641)
Observations	3,132	3,078	3,078	2,724	2,724
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

a. Demographics Results

The demographics category model results in four statistically significant variables. The variables of Dependents and Female result as positively significant, while the variables of Hispanic and Less_College result in a negative significance. The positive marginal effects Female coefficient means that when compared to a male officer, a female officer in the CSS category has a 7.9 ppts higher likelihood of being selected for CD. The negative marginal effects coefficient on the Hispanic variable means that when compared to an officer of the White race, the Hispanic officer has a 10.3 ppts lower likelihood of being selected for CD. The Female and Hispanic variable coefficients are significant at the 5 percent level.

b. Commissioning Results

All four commissioning sources in the CSS category result as statistically significant when compared to an officer who received a commission through the USNA.

As was the case in the combat arms category, the ENLPGM variable in this category also helps answer two of the five secondary research questions. While the Prior_Enlisted variable in the demographics category proved to be statistically insignificant, the ENLPGM category is statistically significant at the 10 percent level. The positive marginal effects coefficient on ENLPGM means that on average and while holding all else constant, an officer who was commissioned through an enlisted to officer program has a 10.9 ppts higher probability of being selected than an officer who was commissioned through the USNA. The answer to both secondary research questions regarding prior enlisted service and commissioning source is yes in this CSS category as well.

c. MOS Results

The MOS category shows two MOSs as statistically significant when compared to a 0180 Adjutant. A 0202 MAGTF Intelligence Officer and 3404 Financial Management Officer have a 31.9 and 16.7 ppts, respectively, lower likelihood of being selected for CD when compared to an officer with an MOS of 0180. Those two results are significant at the 10 and 5 percent level, respectively.

d. Performance Results

The performance variables category results in 11 out of 23 statistically significant variables. The CFT variable results as statistically insignificant in the CSS category, while the PFT variable is significant at the 1 percent level. An officer with one more point than the average on the PFT has a .26 ppts higher likelihood of being selected for CD. These results again serve to answer the secondary research question with a yes for PFT, but inconclusive for CFT.

The RV_Pro_Avg, RV_Cum_Avg, and ROCV_Avg variables help answer the secondary research question regarding FITREP performance effect on CD. As was the case in the combat arms category, higher than average performance on a FITREP does seem to have an increase in the likelihood for selection in the CSS category as well. The RV_Pro_Avg marginal effects coefficient means that an officer with one more point than the average has a 2.9 ppts higher likelihood for selection at the 1 percent significance

level. The coefficient on RV_Cum_Avg means that an officer with one point higher than the average on RV_Cum_Avg has a 3.8 ppts higher probability of being selected. The ROCV_Avg marginal effects coefficient means that an officer who is scored one point higher on the reviewing officer's cumulative value average as measured by the ROCV, has a 41 ppts higher probability of being selected for CD. One interesting result in this category is the result of the RV_Cum_Middle coefficient. That result translates to an officer with a cumulative relative value score in the middle third (86.67–93.33) has a 14.6 ppts higher likelihood of getting selected than an officer who is in the upper third (93.34–100) of a reporting senior's cumulative relative value average.

e. Experience Results

As was the case in the combat arms category, the experience variables category in the CSS competitive category also contains four out of five statistically significant independent variables. Again, this category also helps answer the final secondary research question on the effects of combat deployments on the dependent variable. When compared to an officer who has zero deployments, officers who have one, two, and three-plus combat deployments have a 6, 16, and 13.7 ppts, respectively, higher probability of getting selected for CD. Those three results are significant at the 5 percent, 1 percent, and 5 percent, respectively.

3. Aviation-Ground Category Model Results FY10 Round 1 through FY13 Round 2

The results of the aviation-ground competitive category model also change as more variables are added from the progression of model 1 through model 5 as seen on Table 28. Model 5 ends up with 16 out of 48 statistically significant variables spread among the 1 percent, 5 percent, and 10 percent levels of significance. The Rifle_Unq, Pistol_Unq, and Water_Unq variables are dropped in this category from models 4 and 5 due to them perfectly predicting success in the models. Those variables along with missing observations throughout the addition of the variables categories result in a drop of 80 observations from model 1 through model 5.

Table 28. Aviation-Ground Category Model Results FY10 Round 1 through FY13 Round 2

Aviation-Ground Competitive Category					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	0.0483*	0.0370	0.0348	0.0094	0.0114
	(0.0257)	(0.0270)	(0.0273)	(0.0353)	(0.0354)
Years_Comm_Serv	-0.0675***	-0.0665***	-0.0722***	0.0610	0.0688*
	(0.0252)	(0.0256)	(0.0258)	(0.0407)	(0.0409)
Years_Total_Serv	-0.0016	0.0022	-0.0009	-0.0084	-0.0092
	(0.0105)	(0.0114)	(0.0116)	(0.0175)	(0.0175)
Prior_Enlisted	0.0748	-0.0626	-0.0762	-0.0845	-0.0726
	(0.0897)	(0.1188)	(0.1211)	(0.1545)	(0.1559)
Female	-0.0027	-0.0149	0.0057	0.0340	0.0453
	(0.0667)	(0.0691)	(0.0699)	(0.0987)	(0.0976)
Black	0.0143	0.0071	0.0135	0.2661***	0.2574***
	(0.1006)	(0.1045)	(0.1051)	(0.0580)	(0.0580)
Hispanic	-0.0569	-0.0712	-0.0768	0.0448	0.0600
	(0.0772)	(0.0795)	(0.0800)	(0.0988)	(0.0982)
Other_Race	0.0892	0.0919	0.1026	0.2174***	0.2319***
	(0.0641)	(0.0644)	(0.0642)	(0.0580)	(0.0535)
Married	-0.0007	0.0119	0.0010	-0.0561	-0.0787
	(0.0542)	(0.0563)	(0.0567)	(0.0704)	(0.0705)
Greater_College	0.0933	0.1384	0.1171	-0.1579	-0.1427
	(0.1406)	(0.1465)	(0.1552)	(0.2622)	(0.2673)
Less_College	-0.1257	-0.1605	-0.1840*	-0.1093	-0.0919
	(0.0991)	(0.1037)	(0.1047)	(0.1384)	(0.1385)
Commissioning					
ENLPGM		0.1372	0.1743*	0.2413**	0.2625**
		(0.1065)	(0.1032)	(0.1105)	(0.1053)
NROTC		-0.0206	-0.0281	0.1569*	0.1775**
		(0.0863)	(0.0883)	(0.0827)	(0.0775)
OCC		0.0542	0.0638	0.1863**	0.2001**
		(0.0715)	(0.0721)	(0.0837)	(0.0829)
PLC		-0.0631	-0.0400	0.0935	0.1099
		(0.0767)	(0.0770)	(0.0927)	(0.0918)
Military Occupational Specialty					
MOS_6602			0.1142*	0.1456**	0.1584**
			(0.0640)	(0.0726)	(0.0700)
MOS_7204			0.0909	0.0866	-0.0947
			(0.0774)	(0.0911)	(0.1450)
MOS_7208			-0.0643	0.0101	-0.0458
			(0.0603)	(0.0842)	(0.0919)
MOS_7210			0.0373	0.1508**	0.1502**
			(0.0717)	(0.0752)	(0.0750)
MOS_7220			0.0803	0.1184	0.1016

			(0.0691)	(0.0782)	(0.0823)
Performance					
GCT_TOTAL				0.0001	0.0003
				(0.0028)	(0.0028)
PFT				0.0051***	0.0053***
				(0.0017)	(0.0017)
CFT				0.0012	0.0002
				(0.0032)	(0.0032)
Rifle_Sharp				-0.1780**	-0.1768**
				(0.0738)	(0.0759)
Rifle_Marks				0.2684***	0.2735***
				(0.0578)	(0.0491)
Pistol_Sharp				0.0508	0.0787
				(0.0588)	(0.0593)
Pistol_Marks				0.0778	0.0872
				(0.0707)	(0.0700)
Water_Greater				-0.2459	-0.1515
				(0.2696)	(0.2679)
Adverse_Rpt				-0.7106***	-0.7240***
				(0.0398)	(0.0362)
RV_Pro_Avg				0.0133	0.0127
				(0.0157)	(0.0158)
RV_Pro_Middle				-0.0690	-0.0674
				(0.1080)	(0.1085)
RV_Pro_Lower				-0.0555	-0.0630
				(0.1950)	(0.1963)
RV_Cum_Avg				0.0112	0.0114
				(0.0182)	(0.0185)
RV_Cum_Middle				0.0341	0.0226
				(0.1257)	(0.1257)
RV_Cum_Lower				-0.1691	-0.1585
				(0.2110)	(0.2136)
ROPV_Avg				0.0177	0.0159
				(0.0407)	(0.0409)
ROCV_Avg				0.5282***	0.5464***
				(0.0926)	(0.0948)
Personal_Awards				0.0954**	0.1055***
				(0.0390)	(0.0394)
Other_Awards				-0.0004	-0.0051
				(0.0075)	(0.0079)
Foreign_Language				-0.0670***	-0.0689***
				(0.0222)	(0.0229)
Experience					
Billet_Cmdr					0.0253
					(0.0274)
Billet_XO					0.1345**
					(0.0603)
Cmbt_Deployment					-0.0070

					(0.0637)
Cmbt_Deployment2					0.0643 (0.0826)
Cmbt_Deployment3_Plus					0.1374 (0.1146)
Observations	592	583	583	512	512
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

a. Demographics Results

The demographics category model results in three statistically significant variables. The variables of Years_Comm_Serv, Black, and Other_Race result as positively significant at the 10, 1, and 1 percent level of significance. The marginal effects coefficient on the Black variable means that when compared to an officer of the White race, a Black officer in the aviation-ground category has a 25.7 ppts higher likelihood of being selected for CD. The coefficient on the Other_Race variable means that when compared to an officer of the White race, an officer with a race of Other as described in Table 3, has a 23.2 ppts higher likelihood of being selected for CD. Those two variables are both statistically significant at the 1 percent level.

b. Commissioning Results

Three of the four commissioning sources in the aviation-ground category result as statistically significant when compared to an officer who received a commission through the USNA. As was the case in the previous two competitive categories, the ENLPGM variable in this category also helps answer two of the five secondary research questions. Again, while the Prior_Enlisted variable in the demographics category proved to be statistically insignificant, the ENLPGM category is statistically significant at the 1 percent level. The positive marginal effects coefficient on ENLPGM means that on average and while holding all else constant, an officer who was commissioned through an enlisted to officer program has a 26.6 ppts higher probability of being selected than an officer who was commissioned through the USNA. The answer to both secondary

research questions regarding prior enlisted service and commissioning source is also yes in this aviation-ground category.

c. MOS Results

The MOS category shows two MOSs as statistically significant at the 5 percent level when compared to a 6002 Aircraft Maintenance Officer. A 6602 Aviation Supply Officer and 7210 Air Defense Control Officer have a 15.8 and 15 ppts, respectively, higher likelihood of being selected for CD when compared to an officer with an MOS of 6002.

d. Performance Results

The performance variables category results in 7 out of 23 statistically significant variables. As it did in the CSS category, the CFT variable also results as statistically insignificant in the aviation-ground category. The PFT variable is significant at the 1 percent level. An officer with one more point than the average on the PFT has a .53 ppts higher likelihood of being selected for CD. These results again serve to answer the secondary research question with a yes for PFT, but inconclusive for CFT.

The ROCV_Avg is the only one out of the FITREP variables in this category that is statistically significant. As was the case in the two previous categories, higher than average performance on a FITREP does seem to have an increase in the likelihood for selection in the aviation-ground category. The ROCV_Avg coefficient means that an officer who is scored one point higher on the reviewing officer's cumulative value average as measured by the ROCV, has a 54.6 ppts higher probability of being selected for CD. The ROCV_Avg variable is significant at the 1 percent significance level.

e. Experience Results

The experience variables category in the aviation-ground competitive category contains only one statistically significant variable. The Billet_XO variable is significant at the 5 percent significance level. The coefficient on that variable means that an officer with one more billet description as an executive officer or XO has a 13.4 ppts higher likelihood of being selected for CD when compared to the average number of XO billet

descriptions. None of the combat deployment variables are statistically significant, leading to an inconclusive answer to the effect combat deployments have on being selected for CD in this category.

4. Law Category Model Results FY10 Round 1 through FY13 Round 2

As seen on Table 29, none of the independent variables is statistically significant in predicting selection in any of the four models of the law category. As shown in Table 4, 120 out of the 136 eligible officers in this category were selected for CD. High selection rates as shown in Table 1 and low number of observations did not create enough variation in the selected and not selected variables in order to infer statistical significance.

Table 29. Law Category Model Results FY10 Round 1 through FY13 Round 2

Law Competitive Category				
Models	**(1)**	**(2)**	**(3)**	**(4)**
Dependent Variable = Selected for Career Designation				
Independent Variables				
Demographics				
Dependents	-0.0106 (0.0469)	-0.0010 (0.0468)	0.0292 (0.0387)	0.0401 (0.2021)
Years_Comm_Serv	-0.0128 (0.0472)	-0.0281 (0.0465)	0.0179 (0.0508)	-0.0148 (0.0805)
Years_Total_Serv	0.0210 (0.0363)	0.0165 (0.0346)	-0.0141 (0.0389)	-0.0046 (0.0347)
Female	0.0700 (0.0900)	0.0621 (0.0929)	0.0474 (0.0412)	0.0269 (0.1518)
Other_Race	0.0110 (0.1370)	0.0306 (0.1214)	-0.1877 (0.3392)	-0.1030 (0.4620)
Married	0.1005	0.0833	0.0535	0.0200
	(0.1032)	(0.1015)	(0.0890)	(0.1155)
Greater_College	-0.0025 (0.0663)	0.0057 (0.0656)	0.0704 (0.0645)	0.0336 (0.1678)
Commissioning				
PLC		0.1137 (0.0839)	0.0716 (0.0755)	0.1194 (0.4964)
Performance				
GCT_TOTAL			-0.0001 (0.0026)	-0.0010 (0.0053)
PFT			0.0015 (0.0018)	0.0005 (0.0030)
CFT			0.0003 (0.0035)	-0.0001 (0.0023)

Rifle_Sharp			0.0363 (0.0480)	0.0220 (0.1180)
Rifle_Marks			-0.3234 (0.5538)	-0.3986 (1.0252)
Pistol_Sharp			-0.0458 (0.0631)	-0.0443 (0.2158)
Pistol_Marks			0.0706 (0.0576)	0.0797 (0.3662)
Adverse_Rpt			-0.0598 (0.5646)	-0.1074 (20.0291)
RV_Pro_Avg			-0.0070 (0.0152)	-0.0015 (0.0136)
RV_Pro_Middle			-0.0256 (0.0925)	0.0888 (0.4039)
RV_Pro_Lower			-0.0808 (0.3664)	0.0387 (0.2097)
RV_Cum_Avg			0.0018 (0.0178)	0.0055 (0.0302)
RV_Cum_Middle			-0.0685 (0.0989)	-0.0432 (0.2281)
RV_Cum_Lower			-0.5033 (0.8586)	-0.5038 (1.4223)
ROPV_Avg			0.0399 (0.0456)	0.0409 (0.2067)
ROCV_Avg			-0.0024 (0.1065)	-0.0026 (0.0860)
Personal_Awards			-0.0076 (0.0695)	0.0288 (0.1492)
Other_Awards			0.0288 (0.0240)	0.0343 (0.1728)
Experience				
Cmbt_Deployment				-0.0856 (0.3841)
Observations	110	110	84	78
Standard errors in parentheses				
*** Significant at 1%; ** Significant at 5%; * Significant at 10%				

5. Aviation Category Model Results FY10 Round 1 through FY13 Round 2

As seen on Table 30, the independent variables are not statistically significant in predicting selection when all variables are included in model 5 of the aviation category. The aviation category has the highest overall selection rate of the five competitive categories. Table 4 shows that 933 of the 968 eligible officers in this category were selected for CD, which resulted in a 96.38 selection rate. Similar to the law category, the aviation category's high selection rate prevents it from creating enough variation in the selected and not selected variables in order to infer statistical significance in model 5. Models 1 through 4, however, do have some variables with statistical significance as seen on Table 30.

Table 30. Aviation Category Model Results FY10 Round 1 through FY13 Round 2

Aviation Competitive Category					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	0.0017	0.0016	0.0055	0.0000	0.0000
	(0.0070)	(0.0055)	(0.0057)	(0.0000)	(0.0000)
Years_Comm_Serv	-0.0085	-0.0072	-0.0120**	-0.0000	-0.0000
	(0.0053)	(0.0044)	(0.0054)	(0.0000)	(0.0000)
Years_Total_Serv	-0.0074**	-0.0057**	-0.0064**	-0.0000	-0.0000
	(0.0029)	(0.0026)	(0.0027)	(0.0000)	(0.0000)
Prior_Enlisted	0.0295***	0.0460***	0.0442***	0.0000	0.0000
	(0.0070)	(0.0096)	(0.0115)	(0.0001)	(0.0001)
Female	-0.0153	-0.0098	0.0085	0.0000	0.0000
	(0.0278)	(0.0215)	(0.0114)	(0.0000)	(0.0000)
Hispanic	-0.0151	-0.0109	-0.0300	-0.0000	-0.0000
	(0.0305)	(0.0244)	(0.0381)	(0.0001)	(0.0001)
Other_Race	0.0093	0.0059	0.0054	0.0000	0.0000
	(0.0160)	(0.0131)	(0.0128)	(0.0000)	(0.0000)
Married	0.0376*	0.0292*	0.0179	0.0000	-0.0000
	(0.0198)	(0.0160)	(0.0145)	(0.0000)	(0.0000)
Greater_College	-0.0114	-0.0085	-0.0007	-0.0012	-0.0002
	(0.0399)	(0.0323)	(0.0249)	(0.0042)	(0.0016)
Commissioning					
ENLPGM		-0.9867***	-0.9900***	-0.3245*	-0.0369
		(0.0026)	(0.0027)	(0.1767)	(0.2990)
NROTC		0.0185**	0.0148*	0.0000	0.0000

		(0.0075)	(0.0081)	(0.0000)	(0.0000)
OCC		0.0047	-0.0044	0.0000	0.0000
		(0.0106)	(0.0138)	(0.0000)	(0.0000)
PLC		0.0056	0.0116	0.0000	0.0000
		(0.0109)	(0.0107)	(0.0000)	(0.0000)
Military Occupational Specialty					
MOS_7507			-0.6452**	-0.0001	-0.0000
			(0.3267)	(0.0010)	(0.0002)
MOS_7509			-0.0333	-0.0001	-0.0000
			(0.0455)	(0.0003)	(0.0002)
MOS_7556			-0.1141	-0.0003	-0.0002
			(0.1073)	(0.0010)	(0.0017)
MOS_7562			-0.0467	0.0000	0.0000
			(0.0545)	(0.0000)	(0.0000)
MOS_7563			-0.0490	-0.0000	-0.0000
			(0.0575)	(0.0001)	(0.0001)
MOS_7565			-0.0988	-0.0003	-0.0001
			(0.0696)	(0.0009)	(0.0012)
MOS_7566			-0.0719	-0.0000	-0.0000
			(0.0564)	(0.0001)	(0.0001)
MOS_7568			-0.5983***	-0.0283	-0.0096
			(0.1925)	(0.0611)	(0.0643)
Performance					
GCT_TOTAL				-0.0000	-0.0000
				(0.0000)	(0.0000)
PFT				0.0000	0.0000
				(0.0000)	(0.0000)
CFT				0.0000	0.0000
				(0.0000)	(0.0000)
Rifle_Sharp				-0.0000	-0.0000
				(0.0001)	(0.0001)
Rifle_Marks				0.0000	0.0000
				(0.0000)	(0.0000)
Rifle_Unq				0.0000	0.0000
				(0.0001)	(0.0000)
Pistol_Sharp				-0.0000	-0.0000
				(0.0000)	(0.0000)
Pistol_Marks				0.0000	0.0000
				(0.0000)	(0.0000)
Water_Greater				-0.0157	-0.0160
				(0.0511)	(0.0978)
Adverse_Rpt				-0.0683	-0.0636
				(0.0989)	(0.2715)
RV_Pro_Avg				0.0000	0.0000
				(0.0000)	(0.0000)
RV_Pro_Middle				-0.0668	-0.0205
				(0.0636)	(0.1975)
RV_Pro_Lower				-0.6694***	-0.3684

				(0.2500)	(2.8431)
RV_Cum_Avg				-0.0000	-0.0000
				(0.0000)	(0.0000)
RV_Cum_Middle				0.0016	0.0005
				(0.0037)	(0.0038)
RV_Cum_Lower				0.0001	0.0000
				(0.0002)	(0.0002)
ROPV_Avg				0.0000	0.0000
				(0.0000)	(0.0000)
ROCV_Avg				0.0000	0.0000
				(0.0000)	(0.0000)
Personal_Awards				0.0000	0.0000
				(0.0000)	(0.0000)
Other_Awards				-0.0000	-0.0000
				(0.0000)	(0.0000)
Foreign_Language				-0.0000	0.0000
				(0.0000)	(0.0000)
Experience					
Billet_Cmdr					-0.0000
					(0.0000)
Billet_XO					-0.0409
					(0.2832)
Cmbt_Deployment					0.0000
					(0.0000)
Cmbt_Deployment2					0.0000
					(0.0000)
Cmbt_Deployment3_Plus					0.0000
					(0.0000)
Observations	929	914	718	653	653
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

Model 4 which included demographics, commissioning, MOS, and performance variables shows two statistically significant variables. Variables ENLPGM and RV_Pro_Lower are statistically significant at the 10 and 1 percent level, respectively. Again, not taking experience category variables into consideration, an officer who is commissioned through an enlisted to officer program is 32.5 ppts less likely to be selected when compared to an officer commissioned through the USNA. An officer in the RV_Pro_Lower third of reporting senior's relative value average is 67 ppts less likely to get selected for CD when compared to an officer in the RV_Pro_Upper third. Other statistically significant variables in models 1, 2, and 3 are presented in Table 30.

6. Combat Arms Category Model Results FY12 Round 1 through FY13 Round 2

The results of the combat arms competitive category models for FY12 Round 1 through FY13 Round 2 experienced several changes from the full sample models presented in Table 26 to the restricted models in Table 31. Since the earlier sections illustrate what the marginal effects coefficients mean with relation to the independent variables, the following sections focus mainly on highlighting the major changes between the statistical significance of the full models compared to the restricted models.

Table 31. Combat Arms Category Model Results FY12 Round 1 through FY13 Round 2

Combat Arms Competitive Category FY12 Round 1 through FY13 Round 2					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	-0.0142	-0.0322	-0.0318	-0.0609	-0.0546
	(0.0308)	(0.0321)	(0.0322)	(0.0441)	(0.0455)
Years_Comm_Serv	-0.0433	-0.0447	-0.0415	0.0479	0.0495
	(0.0290)	(0.0301)	(0.0303)	(0.0393)	(0.0404)
Years_Total_Serv	0.0068	0.0258**	0.0254**	0.0349*	0.0461**
	(0.0098)	(0.0123)	(0.0124)	(0.0191)	(0.0197)
Prior_Enlisted	0.1483*	-0.2252*	-0.2162	-0.1648	-0.1531
	(0.0811)	(0.1328)	(0.1343)	(0.2046)	(0.2081)
Black	-0.0297	-0.0405	-0.0406	0.0586	0.0267
	(0.0887)	(0.0917)	(0.0920)	(0.1108)	(0.1153)
Hispanic	0.0508	0.0913	0.0860	0.1100	0.1074
	(0.0749)	(0.0751)	(0.0761)	(0.0939)	(0.0932)
Other_Race	-0.0341	-0.0346	-0.0364	-0.0123	-0.0128
	(0.0600)	(0.0615)	(0.0618)	(0.0836)	(0.0850)
Married	0.0954*	0.1090**	0.1054**	0.1450**	0.1248*
	(0.0499)	(0.0510)	(0.0512)	(0.0671)	(0.0690)
Greater_College	-0.3452***	-0.3761***	-0.3860***	-0.3224*	-0.3485**
	(0.1043)	(0.1051)	(0.1043)	(0.1873)	(0.1771)
Less_College	0.0902	0.0680	0.0716	0.0932	0.1004
	(0.0676)	(0.0719)	(0.0719)	(0.0949)	(0.0935)
Commissioning					
ENLPGM		0.3306***	0.3226***	0.2583**	0.2232
		(0.0738)	(0.0770)	(0.1250)	(0.1390)
NROTC		0.0573	0.0527	0.1395**	0.1201*
		(0.0539)	(0.0543)	(0.0664)	(0.0686)
OCC		0.0339	0.0272	0.1720***	0.1624**

		(0.0501)	(0.0503)	(0.0627)	(0.0639)
PLC		-0.0654	-0.0708	0.1175*	0.0987
		(0.0538)	(0.0540)	(0.0707)	(0.0718)
Military Occupational Specialty					
MOS_0302			-0.0234	-0.0958**	-0.0743
			(0.0351)	(0.0480)	(0.0669)
MOS_1802			-0.0363	-0.1478	-0.1259
			(0.0829)	(0.1183)	(0.1299)
MOS_1803			0.1729**	0.1122	0.2175***
			(0.0689)	(0.0961)	(0.0812)
Performance					
GCT_TOTAL				0.0034	0.0028
				(0.0025)	(0.0025)
PFT				0.0013	0.0018
				(0.0015)	(0.0015)
CFT				0.0007	-0.0001
				(0.0034)	(0.0035)
Rifle_Sharp				-0.0763	-0.0833
				(0.0544)	(0.0554)
Rifle_Marks				-0.0500	-0.0656
				(0.1255)	(0.1254)
Pistol_Sharp				0.0043	-0.0026
				(0.0492)	(0.0498)
Pistol_Marks				-0.0736	-0.0951
				(0.0663)	(0.0681)
Water_Greater				0.3544***	0.3520***
				(0.0429)	(0.0379)
Adverse_Rpt				-0.5248***	-0.5341***
				(0.0910)	(0.0910)
RV_Pro_Avg				0.0256*	0.0296**
				(0.0138)	(0.0140)
RV_Pro_Middle				-0.0405	-0.0548
				(0.0861)	(0.0868)
RV_Pro_Lower				-0.2128	-0.2292
				(0.1499)	(0.1511)
RV_Cum_Avg				0.0348**	0.0380**
				(0.0155)	(0.0157)
RV_Cum_Middle				0.0826	0.0821
				(0.1254)	(0.1309)
RV_Cum_Lower				0.1284	0.1327
				(0.1545)	(0.1570)
ROPV_Avg				0.0501	0.0511
				(0.0694)	(0.0696)
ROCV_Avg				0.5617***	0.5657***
				(0.0941)	(0.0942)
Personal_Awards				0.1226***	0.1050***
				(0.0251)	(0.0263)
Other_Awards				-0.0048	-0.0116

				(0.0090)	(0.0095)
Foreign_Language				-0.0330 (0.0264)	-0.0264 (0.0259)
Experience					
Billet_Cmdr					-0.0132 (0.0163)
Billet_XO					-0.0155 (0.0269)
Cmbt_Deployment					0.2732*** (0.0720)
Cmbt_Deployment2					0.1768** (0.0751)
Cmbt_Deployment3_Plus					0.2298** (0.1096)
Observations	1,028	1,013	1,013	988	988
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

a. Demographics Results

The Married and Greater_College variables go from not significant in the full sample models to statistically significant in the restricted models illustrated in Table 31. As shown in restricted model 5, an officer who is married now has a 12.48 ppts higher likelihood of being selected to CD when compared to an officer who is not married. The new significant coefficient on the Greater_College variable means that an officer who has an advanced degree as described in Table 3, now has a 34.9 ppts lower likelihood of being selected than an officer who simply has a college degree.

b. Commissioning Results

The commissioning source category in this restricted model reverses the answer to the prior enlisted secondary research question. While the full sample models for the combat arms category showed that prior enlisted service did increase the likelihood for selection, the restricted model shows that the answer is now inconclusive. The ENLPGM variable in this category in now no longer statistically significant, which coupled with the insignificant result for the Prior_Enlisted variable in the demographics category, now change the answer to our research question to inconclusive.

c. MOS Results

The MOS category results are similar to those of the full sample models. MOS_1803 increased in significance from the 5 percent level to the 1 percent level and the marginal effect increased from 13.7 to 21.8 ppts.

d. Performance Results

GCT_Total, PFT, CFT, Rifle_Marks, Pistol_Marks, and RV_Pro_Lower all go from statistically significant in the full sample models to statistically insignificant in the FY12 Round 1 through FY13 Round 2 restricted models. The other variables remain statistically significant with the RV_Pro_Avg and RV_Cum_Avg variables changing in significance from 10 to 5 percent and 1 to 5 percent, respectively.

e. Experience Results

The experience category shows the Billet_XO variable as no longer statistically significant. It also shows Cmbt_Deployment2 and Cmbt_Deployment3_Plus changing in significance from the 1 percent to the 5 percent level. The Cmbt_Deployment variable remains statistically significant at the 1 percent level, but it also increases from 17.8 to 27.3 ppts marginal effects.

7. Combat Service Support Category Model Results FY12 Round 1 through FY13 Round 2

The results of the combat service support competitive category models for FY12 Round 1 through FY13 Round 2 are shown in Table 32.

Table 32. Combat Service Support Category Model Results FY12 Round 1 through FY13 Round 2

Combat Service Support Competitive Category FY12 Round 1 through FY13 Round 2					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	0.0293	0.0241	0.0274	0.0316	0.0387
	(0.0185)	(0.0189)	(0.0191)	(0.0248)	(0.0250)
Years_Comm_Serv	-0.0717***	-0.0685***	-0.0699***	0.0729**	0.0665**
	(0.0223)	(0.0230)	(0.0236)	(0.0309)	(0.0314)
Years_Total_Serv	0.0021	0.0068	0.0069	-0.0055	-0.0027
	(0.0069)	(0.0078)	(0.0079)	(0.0115)	(0.0117)
Prior_Enlisted	0.2256***	0.1278*	0.1375*	0.1340	0.1345
	(0.0505)	(0.0756)	(0.0758)	(0.1002)	(0.1020)
Female	0.1064***	0.1043***	0.1158***	0.0566	0.0593
	(0.0368)	(0.0380)	(0.0388)	(0.0534)	(0.0534)
Black	-0.2083***	-0.2048***	-0.2002***	-0.0751	-0.0845
	(0.0590)	(0.0597)	(0.0606)	(0.0826)	(0.0831)
Hispanic	-0.1648***	-0.1762***	-0.1642***	-0.1141*	-0.1100*
	(0.0464)	(0.0468)	(0.0477)	(0.0628)	(0.0632)
Other_Race	-0.0201	-0.0118	-0.0129	0.0013	0.0046
	(0.0397)	(0.0401)	(0.0404)	(0.0503)	(0.0505)
Married	0.0004	0.0052	0.0007	-0.0342	-0.0433
	(0.0349)	(0.0354)	(0.0357)	(0.0450)	(0.0452)
Greater_College	0.0511	0.0483	0.0682	-0.1197	-0.1242
	(0.0851)	(0.0860)	(0.0848)	(0.1217)	(0.1229)
Less_College	-0.0338	-0.0502	-0.0546	-0.1705**	-0.1657**
	(0.0553)	(0.0570)	(0.0574)	(0.0720)	(0.0729)
Commissioning					
ENLPGM		0.1311*	0.1332*	0.1477	0.1492
		(0.0758)	(0.0764)	(0.0974)	(0.0983)
NROTC		0.0672	0.0721	0.1273**	0.1248**
		(0.0452)	(0.0457)	(0.0516)	(0.0519)
OCC		0.0601	0.0647	0.2162***	0.2056***
		(0.0393)	(0.0396)	(0.0467)	(0.0474)
PLC		0.0003	0.0069	0.1700***	0.1645***
		(0.0429)	(0.0434)	(0.0514)	(0.0522)
Military Occupational Specialty					
MOS_0202			-0.4227***	-0.5655***	-0.5651***
			(0.1501)	(0.0965)	(0.0948)
MOS_0203			0.0799	0.0058	-0.0220
			(0.0617)	(0.0830)	(0.0857)
MOS_0204			0.0589	-0.0260	-0.0402
			(0.0999)	(0.1211)	(0.1224)
MOS_0206			-0.0375	0.0549	0.0024
			(0.0812)	(0.0986)	(0.1091)
MOS_0207			0.0321	0.0418	0.0361

			(0.0754)	(0.0973)	(0.0983)
MOS_0402			-0.0331	-0.0664	-0.1063
			(0.0537)	(0.0716)	(0.0749)
MOS_0602			-0.0049	0.0275	-0.0059
			(0.0571)	(0.0732)	(0.0787)
MOS_1302			-0.0148	-0.0269	-0.0821
			(0.0621)	(0.0817)	(0.0924)
MOS_3002			0.0103	-0.0649	-0.0660
			(0.0608)	(0.0827)	(0.0831)
MOS_3404			-0.1857**	-0.1750*	-0.1765*
			(0.0741)	(0.0943)	(0.0947)
MOS_4302			-0.0502	-0.0089	-0.0031
			(0.0872)	(0.1131)	(0.1132)
MOS_5803			-0.0170	-0.0422	-0.0867
			(0.0732)	(0.0937)	(0.1018)
Performance					
GCT_TOTAL				-0.0005	-0.0006
				(0.0018)	(0.0018)
PFT				0.0018*	0.0016*
				(0.0009)	(0.0009)
CFT				0.0046**	0.0048**
				(0.0022)	(0.0022)
Rifle_Sharp				0.0740**	0.0737*
				(0.0375)	(0.0377)
Rifle_Marks				0.1983***	0.1948***
				(0.0701)	(0.0714)
Pistol_Sharp				-0.0554	-0.0623*
				(0.0370)	(0.0373)
Pistol_Marks				-0.0747	-0.0696
				(0.0462)	(0.0464)
Water_Unq				0.0035	0.0036
				(0.2980)	(0.2972)
Water_Greater				-0.1144	-0.1034
				(0.1417)	(0.1431)
Adverse_Rpt				-0.5044***	-0.5055***
				(0.0845)	(0.0830)
RV_Pro_Avg				0.0452***	0.0452***
				(0.0092)	(0.0093)
RV_Pro_Middle				0.1598***	0.1600***
				(0.0598)	(0.0601)
RV_Pro_Lower				0.2160**	0.2101**
				(0.0868)	(0.0881)
RV_Cum_Avg				0.0425***	0.0436***
				(0.0109)	(0.0110)
RV_Cum_Middle				0.1709**	0.1793***
				(0.0670)	(0.0672)
RV_Cum_Lower				0.1145	0.1260
				(0.1004)	(0.0998)

ROPV_Avg				-0.0517** (0.0244)	-0.0516** (0.0247)
ROCV_Avg				0.4784*** (0.0522)	0.4821*** (0.0527)
Personal_Awards				0.0621*** (0.0213)	0.0568*** (0.0217)
Other_Awards				0.0045 (0.0057)	0.0002 (0.0060)
Foreign_Language GCT_TOTAL				0.0047 (0.0085)	0.0047 (0.0086)
Experience					
Billet_Cmdr					0.0097 (0.0113)
Billet_XO					0.0311 (0.0268)
Cmbt_Deployment					0.0558 (0.0416)
Cmbt_Deployment2					0.1262** (0.0523)
Cmbt_Deployment3_Plus					0.0929 (0.1064)
Observations	1,737	1,719	1,719	1,632	1,632
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

a. Demographics Results

The Dependents and Female variables are no longer statistically significant in the restricted models as shown in Table 32. The Years_Comm_Serv variable, however, is now significant at the 5 percent level.

b. Commissioning Results

The commissioning source category goes from all variables being significant to now only three being significant. A major change is that the ENLPGM variable is now statistically insignificant, which again leads to an inconclusive answer regarding the prior enlisted service secondary research question.

c. MOS Results

The two MOS variables significant in the full sample models remain significant in the restricted models. MOS_3404 reduces in significance from the 5 percent level to the 10 percent level. MOS_0202 increases in significance from the 10 percent level to the 1 percent level and its marginal effects coefficient also goes from

-0.319 to -0.565. An officer with an MOS of 0202 now has a 56.5 ppts lower likelihood of being selected to CD when compared to an officer with an 0180 MOS.

d. Performance Results

Variables CFT, RV_Pro_Middle, RV_Pro_Lower, and ROPV_Avg are now statistically significant under the restricted models. Additionally, the Pistol_Marks variable is now statistically insignificant, while all other variables remain unchanged by either staying significant or insignificant. The variable ROCV_Avg increased in significance from 0.409 to 0.482. An officer with one more point above the average on ROCV_Avg now has a 48.2 ppts higher likelihood of getting selected for CD.

e. Experience Results

The experience category goes from four statistically significant variables to just one. Cmbt_Deployment2 remains statistically significant, but reduces in magnitude from 0.159 to 0.126 and significance from the 1 percent to the 5 percent level.

8. Aviation-Ground Category Model Results FY12 Round 1 through FY13 Round 2

The results of the aviation-ground competitive category models for FY12 Round 1 through FY13 Round 2 are illustrated in Table 33.

Table 33. Aviation-Ground Category Model Results FY12 Round 1 through FY13 Round 2

Aviation-Ground Competitive Category FY12 Round 1 through FY13 Round 2					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	0.0414	0.0287	0.0295	0.0187	0.0210
	(0.0326)	(0.0345)	(0.0350)	(0.0484)	(0.0490)
Years_Comm_Serv	-0.0834*	-0.0689	-0.0769	0.0688	0.0832
	(0.0446)	(0.0463)	(0.0474)	(0.0647)	(0.0657)
Years_Total_Serv	-0.0048	0.0010	-0.0040	-0.0206	-0.0219
	(0.0141)	(0.0155)	(0.0162)	(0.0244)	(0.0247)
Prior_Enlisted	0.0609	-0.0946	-0.1101	-0.2583	-0.2441
	(0.1262)	(0.1646)	(0.1699)	(0.2334)	(0.2375)
Female	0.0404	0.0313	0.0733	0.1556	0.1644
	(0.0828)	(0.0849)	(0.0854)	(0.1129)	(0.1123)
Black	-0.0174	-0.0003	-0.0147	0.2189	0.2192
	(0.1296)	(0.1303)	(0.1343)	(0.1590)	(0.1545)
Hispanic	-0.0763	-0.0812	-0.0892	0.1977	0.1816
	(0.1080)	(0.1094)	(0.1098)	(0.1279)	(0.1372)
Other_Race	0.0194	0.0239	0.0255	0.1951*	0.2111**
	(0.0875)	(0.0873)	(0.0892)	(0.1030)	(0.1008)
Married	-0.0017	0.0170	-0.0002	-0.0322	-0.0636
	(0.0701)	(0.0731)	(0.0741)	(0.0997)	(0.1013)
Greater_College	-0.0171	0.0463	0.0224	-0.2096	-0.1826
	(0.2039)	(0.2209)	(0.2272)	(0.3365)	(0.3439)
Less_College	-0.0611	-0.1046	-0.1243	-0.1432	-0.1112
	(0.1078)	(0.1136)	(0.1152)	(0.1608)	(0.1626)
Commissioning					
ENLPGM		0.1865	0.2345*	0.4015***	0.4158***
		(0.1458)	(0.1399)	(0.1297)	(0.1254)
NROTC		0.0497	0.0178	0.1412	0.1593
		(0.1129)	(0.1198)	(0.1331)	(0.1306)
OCC		0.1146	0.1167	0.3452***	0.3573***
		(0.0917)	(0.0936)	(0.1069)	(0.1066)
PLC		-0.0160	0.0067	0.2420**	0.2498**
		(0.0961)	(0.0975)	(0.1147)	(0.1147)
Military Occupational Specialty					
MOS_6602			0.1225	0.1997**	0.2122**
			(0.0827)	(0.0970)	(0.0961)
MOS_7204			0.1344	0.2422**	0.1334
			(0.1081)	(0.1022)	(0.1707)
MOS_7208			-0.0932	0.0730	0.0073
			(0.0770)	(0.1160)	(0.1299)
MOS_7210			0.0441	0.2066*	0.1948*
			(0.0954)	(0.1063)	(0.1105)

MOS_7220			0.0695 (0.0920)	0.2121** (0.1010)	0.2027* (0.1061)
Performance					
GCT_TOTAL				0.0013 (0.0039)	0.0009 (0.0040)
PFT				0.0077*** (0.0024)	0.0081*** (0.0024)
CFT				0.0092* (0.0054)	0.0078 (0.0055)
Rifle_Sharp				-0.1807*	-0.1889*
				(0.0980)	(0.1005)
Rifle_Marks				0.3484*** (0.0655)	0.3567*** (0.0553)
Pistol_Sharp				0.0856 (0.0818)	0.0996 (0.0844)
Pistol_Marks				0.0738 (0.0993)	0.0708 (0.1010)
Water_Greater				-0.1644 (0.2972)	-0.0812 (0.3002)
Adverse_Rpt				-0.6401*** (0.0519)	-0.6510*** (0.0458)
RV_Pro_Avg				0.0304 (0.0215)	0.0287 (0.0217)
RV_Pro_Middle				-0.1685 (0.1442)	-0.1734 (0.1466)
RV_Pro_Lower				-0.0514 (0.2641)	-0.0869 (0.2702)
RV_Cum_Avg				-0.0272 (0.0255)	-0.0245 (0.0261)
RV_Cum_Middle				-0.0111 (0.1645)	-0.0258 (0.1658)
RV_Cum_Lower				-0.3340 (0.2570)	-0.2998 (0.2699)
ROPV_Avg				-0.0381 (0.0564)	-0.0448 (0.0568)
ROCV_Avg				0.7068*** (0.1352)	0.7528*** (0.1421)
Personal_Awards				0.1725*** (0.0570)	0.1693*** (0.0580)
Other_Awards				0.0042 (0.0098)	-0.0020 (0.0107)
Foreign_Language				-0.0660** (0.0304)	-0.0656** (0.0312)
Experience					
Billet_Cmdr					0.0167 (0.0385)
Billet_XO					0.0805 (0.0895)

Cmbt_Deployment					0.0271 (0.0896)
Cmbt_Deployment2					0.1298 (0.1137)
Cmbt_Deployment3_Plus					0.2071 (0.1397)
Observations	371	368	368	337	337
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

a. Demographics Results

The variables Years_Comm_Serv and Black are no longer statistically significant in model 5 of the restricted sample models. The Other_Race variable remains statistically significant, but drops in significance from the 1 percent level to the 10 percent level.

b. Commissioning Results

The commissioning source category in the aviation-ground category retains three statistically significant variables, but drops NROTC to statistically insignificant and adds PLC to significant at the 10 percent level. The aviation-ground competitive category is the only category where the ENLPGM variable remains statistically significant. The variable not only remains significant, but also increases in magnitude from 0.263 to 0.416 and also increases from 5 percent to the 1 percent level of significance.

c. MOS Results

The MOS_6602 and MOS_7210 variables remain statistically significant in the restricted models. MOS_7220 also goes from insignificant in the full sample models to statistically significant in this model.

d. Performance Results

All of the variables that were significant in the full sample models remain statistically significant in the restricted models. The ROCV_Avg variable increases in magnitude from 0.546 to 0.753 while still remaining significant at the 1 percent level.

e. Experience Results

Variable Billet_XO goes from being significant in the full sample models to statistically insignificant in the restricted models. All other variables in the experience variables category remain statistically insignificant.

9. Law Category Model Results FY12 Round 1 through FY13 Round 2

As seen on Table 34 and as was the case in the full sample models, none of the independent variables are statistically significant in predicting selection in any of the four models of the law category. Again, high selection rates and low number of observations do not create enough variation in the selected and not selected variables in order to infer statistical significance.

Table 34. Law Category Model Results FY12 Round 1 through FY13 Round 2

Law Competitive Category FY12 Round 1 through FY13 Round 2				
Models	**(1)**	**(2)**	**(3)**	**(4)**
Dependent Variable = Selected for Career Designation				
Independent Variables				
Demographics				
Dependents	-0.0136	0.0000	0.0029	0.0000
	(0.0555)	(0.0558)	(0.0104)	(0.0000)
Years_Comm_Serv	-0.0268	-0.0402	0.0112	0.0000
	(0.0614)	(0.0583)	(0.0300)	(0.0000)
Years_Total_Serv	0.0309	0.0244	-0.0086	-0.0000
	(0.0464)	(0.0434)	(0.0227)	(0.0001)
Female	0.0960	0.0877	0.0096	0.0000
	(0.1034)	(0.1071)	(0.0259)	(0.0001)
Other_Race	0.0438	0.0638	-0.0479	-0.0000
	(0.1388)	(0.1239)	(0.1659)	(0.0001)
Married	0.1241	0.1015	0.0225	0.0001
	(0.1202)	(0.1188)	(0.0510)	(0.0009)
Greater_College	0.0417	0.0523	0.0536	0.0007
	(0.0824)	(0.0828)	(0.0911)	(0.0045)
Commissioning				
PLC		0.1263	0.0207	0.0010
		(0.0948)	(0.0531)	(0.0064)
Performance				
GCT_TOTAL			0.0002	0.0000
			(0.0009)	(0.0000)
PFT			0.0003	-0.0000
			(0.0009)	(0.0000)

CFT			0.0015 (0.0046)	0.0000 (0.0000)
Rifle_Sharp			0.0119 (0.0299)	0.0001 (0.0007)
Rifle_Marks			-0.7277 (1.4560)	-0.8483 (1.1340)
Pistol_Sharp			-0.0078 (0.0220)	-0.0000 (0.0001)
Pistol_Marks			0.0801 (0.1080)	0.0132 (0.0478)
Adverse_Rpt			-0.2017 (3.4150)	-0.1325 (0.5635)
RV_Pro_Avg			-0.0012 (0.0051)	0.0000 (0.0000)
RV_Pro_Middle			-0.0054 (0.0299)	0.0004 (0.0043)
RV_Pro_Lower			-0.0101 (0.1223)	0.0000 (0.0003)
RV_Cum_Avg			-0.0009 (0.0053)	0.0000 (0.0000)
RV_Cum_Middle			-0.0268 (0.0682)	-0.0000 (0.0001)
RV_Cum_Lower			-0.8553 (0.6184)	-0.5463 (2.3075)
ROPV_Avg			0.0071 (0.0198)	0.0000 (0.0000)
ROCV_Avg			-0.0098 (0.0291)	-0.0000 (0.0000)
Personal_Awards			0.0036 (0.0157)	0.0000 (0.0000)
Other_Awards			0.0064 (0.0172)	0.0000 (0.0001)
Experience				
Cmbt_Deployment				-0.0634 (0.2547)
Observations	90	90	71	67
Standard errors in parentheses				
*** Significant at 1%; ** Significant at 5%; * Significant at 10%				

10. Aviation Category Model Results FY12 Round 1 through FY13 Round 2

Table 35 shows similar results to the full sample models. While the full sample models in Table 30 showed two statistically significant variables in model 4, however, no variables are significant in models 4 and 5 of the restricted sample models. Models 1, 2, and 3 still show some statistically significant variables as was the case in the full sample models.

Table 35. Aviation Category Model Results FY12 Round 1 through FY13 Round 2

Aviation Competitive Category FY12 Round 1 through FY13 Round 2					
Models	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Dependent Variable = Selected for Career Designation					
Independent Variables					
Demographics					
Dependents	0.0016	0.0011	0.0089	0.0000	0.0000
	(0.0106)	(0.0086)	(0.0104)	(0.0000)	(0.0000)
Years_Comm_Serv	-0.0188*	-0.0147*	-0.0240**	-0.0000	-0.0000
	(0.0099)	(0.0084)	(0.0113)	(0.0000)	(0.0000)
Years_Total_Serv	-0.0113***	-0.0095**	-0.0124***	-0.0000	-0.0000
	(0.0044)	(0.0042)	(0.0046)	(0.0000)	(0.0000)
Female	0.0389***	0.0617***	0.0586***	0.0000	0.0000
	(0.0103)	(0.0148)	(0.0181)	(0.0000)	(0.0000)
Hispanic	-0.0360	-0.0213	0.0128	0.0000	0.0000
	(0.0488)	(0.0379)	(0.0161)	(0.0000)	(0.0000)
Other_Race	-0.0291	-0.0168	-0.0520	-0.0003	-0.0000
	(0.0459)	(0.0350)	(0.0603)	(0.0016)	(0.0001)
Married	0.0248	0.0174	0.0170	0.0000	0.0000
	(0.0152)	(0.0135)	(0.0120)	(0.0000)	(0.0000)
Greater_College	0.0525*	0.0435*	0.0284	-0.0000	-0.0000
	(0.0302)	(0.0255)	(0.0253)	(0.0000)	(0.0000)
Commissioning					
ENLPGM		-0.9720***	-0.9859***	-0.0112	0.0000
		(0.0004)	(0.0035)	(0.0278)	(0.0000)
NROTC		0.0232**	0.0132	0.0000	0.0000
		(0.0114)	(0.0176)	(0.0000)	(0.0000)
OCC		0.0148	-0.0100	0.0000	0.0000
		(0.0151)	(0.0244)	(0.0000)	(0.0000)
PLC		0.0129	0.0174	0.0000	0.0000
		(0.0173)	(0.0184)	(0.0000)	(0.0000)
Military Occupational Specialty					
MOS_7507			-0.4817	0.0000	0.0000
			(0.3962)	(0.0000)	(0.0000)
MOS_7509			-0.0577	-0.0000	0.0000

			(0.0761)	(0.0000)	(0.0000)
MOS_7556			-0.1336 (0.1402)	0.0000 (0.0000)	0.0000 (0.0000)
MOS_7562			-0.0180 (0.0556)	0.0000 (0.0000)	0.0000 (0.0000)
MOS_7563			-0.0761 (0.0929)	-0.0000 (0.0001)	0.0000 (0.0000)
MOS_7565			-0.1272 (0.0988)	-0.0000 (0.0002)	-0.0000 (0.0000)
MOS_7566			-0.0945 (0.0889)	-0.0000 (0.0000)	0.0000 (0.0000)
MOS_7568			-0.6259*** (0.2206)	-0.0046 (0.0182)	-0.0000 (0.0000)
Performance					
GCT_TOTAL				-0.0000 (0.0000)	-0.0000 (0.0000)
PFT				0.0000 (0.0000)	0.0000 (0.0000)
CFT				0.0000	0.0000
				(0.0000)	(0.0000)
Rifle_Sharp				-0.0000 (0.0001)	-0.0000 (0.0000)
Rifle_Marks				-0.0002 (0.0008)	-0.0000 (0.0002)
Pistol_Sharp				-0.0000 (0.0000)	-0.0000 (0.0000)
Pistol_Marks				0.0000 (0.0000)	-0.0000 (0.0000)
Water_Greater				-0.0000 (0.0003)	-0.0140 (11.6320)
Adverse_Rpt				-0.0016 (0.0087)	-0.0000 (0.0000)
RV_Pro_Avg				0.0000 (0.0000)	0.0000 (0.0000)
RV_Pro_Middle				-0.0153 (0.0363)	-0.0000 (0.0000)
RV_Pro_Lower				-0.3824 (0.3723)	-0.0000 (0.0001)
RV_Cum_Avg				-0.0000 (0.0000)	-0.0000 (0.0000)
RV_Cum_Middle				0.0000 (0.0002)	0.0000 (0.0000)
RV_Cum_Lower				0.0000 (0.0000)	-0.0000 (0.0000)
ROPV_Avg				0.0000 (0.0000)	-0.0000 (0.0000)
ROCV_Avg				0.0000 (0.0000)	0.0000 (0.0000)

Personal_Awards				0.0000 (0.0000)	0.0000 (0.0000)
Other_Awards				-0.0000 (0.0000)	-0.0000 (0.0000)
Experience					
Billet_Cmdr					-0.0005 (0.0226)
Billet_XO					-0.0000 (0.0000)
Cmbt_Deployment					-0.0000 (0.0000)
Observations	200	199	131	120	113
Standard errors in parentheses					
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

E. INTERACTIVE SELECTION COUNSELING MODEL

The interactive selection counseling model created in this study is a spin-off of Hoffman's (2008) interactive promotion model. The researcher did not have access to Hoffman's original model so the model provided here, while similar, is constructed differently than Hoffman's. The biggest difference in the model provided here is the use of a "baseline" officer and selection averages used to build the model, which was accomplished by using the "matrix" command in STATA.

The interactive selection counseling model for the combat arms competitive category is shown in Figures 6. Appendices Q and R contain sample snapshots of the combat service support and aviation-ground competitive categories models. As previously discussed, the high selection rates and low observations of the law and aviation competitive categories do not provide enough variation to produce statically significant explanatory variables. As such, an interactive statistical counseling model is not provided for those categories.

The values for the continuous variables shown on the models are the average values for the officers selected for CD during the FY12 Round 1 through FY13 Round 2 boards in that particular competitive category. The FY FY12 Round 1 through FY13 Round 2 dataset was used because those are the latest and most competitive boards of the sample. The values for the binary variables are the characteristics of the "baseline"

officer used in the Probit regression, which are explained in Section D of this chapter. The probability of getting selected for the "baseline" officer is displayed in the bottom left-hand corner of the model. As seen in Figure 6, the probability of getting selected for the "baseline" officer is 68.61 percent. As the values for the independent variables in the model change, the predicted probability of CD selection will either increase or decrease depending on the sign of the coefficient. The predicted probability of selection changes in direct relation to the variable's coefficient. As seen of Figure 6, the values for the dependents, personal awards, commander FITREPs, and XO FITREPs are not whole numbers because those are the values for the "average" selected officer as explained earlier. Any other officer will have whole numbers in those blocks. The values entered into any of those blocks will adjust the predicted probability based off that "average" number.

Additionally, the statistically significant variables are highlighted in the darker shade of green in the interactive model. Since the other variables did not prove to be statistically significant, they have a coefficient of "0" and will not affect the overall probability for selection. The variables highlighted in dark green are significant and their coefficients are built into the model to increase or decrease probability of selection depending on the input value. It should be noted that the regressions performed to build the interactive models did not include those variables that "perfectly predicted success" in the models of Section D. As a result, the magnitudes of the coefficients in the interactive model are slightly different than the ones reported in Section D. As such, the NROTC and Hispanic variables of the combat arms and combat service support categories, respectively, are no longer significant. Also as a result of dropping those variables, the Other_Race, ENLPGM, OCC, PLC, MOS_6602, MOS_7210, MOS_7220, and Rifle_Marks variables are no longer significant in the aviation-ground interactive model.

In addition to the interactive selection counseling model, a ROCV and ROPV calculator is provided in Appendix S to assist the user in calculating their values. The calculator uses the RO profiles obtained from the MBS and uses Reynols' method to calculate the ROCV and ROPV. The calculator has the ability to calculate an average using up to six FITREPs, but will also calculate an average if less than six FITREPs are entered.

1. Combat Arms Competitive Category Interactive Selection Counseling Model

The officer with the characteristics displayed in Figure 6 has a 68.61 percent predicted probability of being selected for CD. Again, that predicted probability is the same as the model's value because the values in the blocks purposely match the average values for the selected officers in the combat arms category. Figure 7 shows the same model, but with an officer of slightly different characteristics. The changes are highlighted in red. As shown in Figure 7, the officer with the different characteristics now has a 90.24 percent predicted probability of being selected for CD.

Combat Arms Competitive Category Interactive Model using FY12Rd1 through FY13Rd2 Dataset				
Demographics	**Input Value**			**Input Value**
Number of Dependents	**0.61**		CFT Score	**295**
Years of Commissioned Service	**3.03**		Rifle Expert (1 if Yes, 0 if No)	**1**
Years of Total Service	**4.7**		Rifle Sharpshooter (1 if Yes, 0 if No)	**0**
Not Prior Enlisted (1 if Yes, 0 if No)	**1**		Rifle Marksman (1 if Yes, 0 if No)	**0**
Male (1 if Yes, 0 if No)	**1**		Pistol Expert (1 if Yes, 0 if No)	**1**
Female (1 if Yes, 0 if No)	**0**		Pistol Sharpshooter (1 if Yes, 0 if No)	**0**
Prior Enlisted (1 if Yes, 0 if No)(O-2E, O-3E, or ENLPGM Commissioning Source)	**0**		Pistol Marksman (1 if Yes, 0 if No)	**0**
White (1 if Yes, 0 if No)	**1**		Water Qualified (1 if Yes, 0 if No)	**1**
Black (1 if Yes, 0 if No)	**0**		Water Greater (1 if Yes, 0 if No)	**0**
Hispanic (1 if Yes, 0 if No)	**0**		No Adverse FITREP (1 if Yes, 0 if No)	**1**
Other Race (1 if Yes, 0 if No)	**0**		Adverse FITREP (1 if Yes, 0 if No)	**0**
Single (1 if Yes, 0 if No)	**1**		Relative Value "At Processing" Average of Averages	**92.71**
Married (1 if Yes, 0 if No)	**0**		RV "At Processing" Avg in Upper Third (93.34-100)	**1**
College Degree (1 if Yes, 0 if No)	**1**		RV "At Processing" Avg in Middle Third (86.67-93.33)	**0**
Master's, Doctorate, or Higher than College Degree (1 if Yes, 0 if No)	**0**		RV "At Processing" Avg in Lower Third (80-86.66)	**0**
High School Diploma (1 if Yes, 0 if No)	**0**		Relative Value "Cumulative" Average of Averages	**90.9**
Commissioning			RV "Cumulative" Avg in Upper Third (93.34-100)	**1**
United States Naval Academy (1 if Yes, 0 if No)	**1**		RV "Cumulative" Avg in Middle Third (86.67-93.33)	**0**
Enlisted to Officer Program (1 if Yes, 0 if No)	**0**		RV "Cumulative" Avg in Lower Third (80-86.66)	**0**
NROTC (1 if Yes, 0 if No)	**0**		ROPV Average of Averages	**0.307**
OCC (1 if Yes, 0 if No)	**0**		ROCV Average of Averages	**0.111**
PLC (1 if Yes, 0 if No)	**0**		Number of Personal Awards	**1.3**
MOS			Fireign Language Tested (DLPT)	
MOS 0802 (1 if Yes, 0 if No)	**1**		***Experience***	
MOS 0302 (1 if Yes, 0 if No)	**0**		Number of Observed FITREPs with Commander, Cmdr, or CO in Billet Description	**3.25**
MOS 1802 (1 if Yes, 0 if No)	**0**		Number of Observed FITREPs with Executive Officer or XO in Billet Description	**0.6**
MOS 1803 (1 if Yes, 0 if No)	**0**		0 Combat Deplyments (1 if Yes, 0 if No)	**1**
Performance			1 Combat Deplyment (1 if Yes, 0 if No)	**0**
GCT Score	**123**		2 Combat Deployments (1 if Yes, 0 if No)	**0**
PFT Score	**281**		3-Plus Combat Deployments (1 if Yes, 0 if No)	**0**
Average Selection Percentage for Combat Arms MOS at Average Values	**68.61%**		**YOUR Predicted Probability of Selection**	**68.61%**

Career Designation

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Figure 6. Combat Arms Competitive Category Interactive Selection Counseling Model

Combat Arms Competitive Category Interactive Model using FY12Rd1 through FY13Rd2 Dataset				
Demographics	**Input Value**			**Input Value**
Number of Dependents	*1*		CFT Score	295
Years of Commissioned Service	3.03		Rifle Expert (1 if Yes, 0 if No)	1
Years of Total Service	4.7		Rifle Sharpshooter (1 if Yes, 0 if No)	0
Not Prior Enlisted (1 if Yes, 0 if No)	1		Rifle Marksman (1 if Yes, 0 if No)	0
Male (1 if Yes, 0 if No)	1		Pistol Expert (1 if Yes, 0 if No)	1
Female (1 if Yes, 0 if No)	0		Pistol Sharpshooter (1 if Yes, 0 if No)	0
Prior Enlisted (1 if Yes, 0 if No)(O-2E, O-3E, or ENLPGM Commissioning Source)	0		Pistol Marksman (1 if Yes, 0 if No)	0
White (1 if Yes, 0 if No)	1		Water Qualified (1 if Yes, 0 if No)	1
Black (1 if Yes, 0 if No)	0		Water Greater (1 if Yes, 0 if No)	0
Hispanic (1 if Yes, 0 if No)	0		No Adverse FITREP (1 if Yes, 0 if No)	1
Other Race (1 if Yes, 0 if No)	0		Adverse FITREP (1 if Yes, 0 if No)	0
Single (1 if Yes, 0 if No)	1		Relative Value "At Processing" Average of Averages	*93*
Married (1 if Yes, 0 if No)	0		RV "At Processing" Avg in Upper Third (93.34-100)	1
College Degree (1 if Yes, 0 if No)	1		RV "At Processing" Avg in Middle Third (86.67-93.33)	0
Master's, Doctorate, or Higher than College Degree (1 if Yes, 0 if No)	0		RV "At Processing" Avg in Lower Third (80-86.66)	0
High School Diploma (1 if Yes, 0 if No)	0		Relative Value "Cumulative" Average of Averages	*92*
Commissioning			RV "Cumulative" Avg in Upper Third (93.34-100)	1
United States Naval Academy (1 if Yes, 0 if No)	1		RV "Cumulative" Avg in Middle Third (86.67-93.33)	0
Enlisted to Officer Program (1 if Yes, 0 if No)	0		RV "Cumulative" Avg in Lower Third (80-86.66)	0
NROTC (1 if Yes, 0 if No)	0		ROPV Average of Averages	0.307
OCC (1 if Yes, 0 if No)	0		ROCV Average of Averages	0.111
PLC (1 if Yes, 0 if No)	0		Number of Personal Awards	*1*
MOS			Fireign Language Tested (DLPT)	
MOS 0802 (1 if Yes, 0 if No)	1		***Experience***	
MOS 0302 (1 if Yes, 0 if No)	0		Number of Observed FITREPs with Commander, Cmdr, or CO in Billet Description	*3*
MOS 1802 (1 if Yes, 0 if No)	0		Number of Observed FITREPs with Executive Officer or XO in Billet Description	*1*
MOS 1803 (1 if Yes, 0 if No)	0		0 Combat Deplyments (1 if Yes, 0 if No)	0
Performance			1 Combat Deplyment (1 if Yes, 0 if No)	*1*
GCT Score	123		2 Combat Deployments (1 if Yes, 0 if No)	0
PFT Score	281		3-Plus Combat Deployments (1 if Yes, 0 if No)	0
Average Selection Percentage for Combat Arms MOS at Average Values	68.61%		**YOUR Predicted Probability of Selection**	90.24%

Career Designation

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Figure 7. Combat Arms Competitive Category Interactive Selection Counseling Model with different Characteristics

F. CHAPTER SUMMARY

In order to answer the primary and secondary research questions, the dataset was analyzed using a Probit model. The Probit model used CD Selected as the binary response dependent variable and the five variable categories of demographics, commissioning, MOS, performance, and experience as explanatory variables. Two sets of models were used to complete the analysis. One set of models included the complete dataset of eight CD boards and the other set of models included only the dataset from the last four CD boards as explained in Chapter IV. Tables 26 through 35 and appendices L and M illustrate the results of the econometric models by corresponding competitive categories. This chapter also illustrated an interpretation of some of major results of the models. The interactive selection counseling models were also introduced and explained during this chapter. The intended use and distribution of those models is discussed in Chapter VI. It will also conclude the thesis by summarizing the major findings as they apply to the primary and secondary research questions. Chapter VI will also provide the limitations of the research and provide recommendations based on the findings of this study.

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VI. CONCLUSIONS AND RECOMMENDATION

A. CONCLUSIONS

As mentioned in the introductory chapter, the purpose of this thesis is to give career counselors, monitors, commanding officers, executive officers, company commanders, and most importantly, CD eligible officers the ability to isolate a variable and to show the effect it has on CD selection. This research accomplishes that purpose by performing a multivariate data analysis using Probit econometric models. The results of Probit models help understand the effect a certain independent variable has on the predicted probability for CD selection, while holding other observable variables constant.

The study's results also aid in producing the user-friendly interactive selection counseling model, which uses the coefficients of the results to convert individual characteristics into predicted probability for selection to CD. One of the objectives of the interactive model is to provide the career counseling section at MMSB with a supplemental tool that could be used to help junior officers eligible for CD. The model would give the counselors the ability to educate officers on the quantitative measures associated with their current characteristics and to help them understand what variables they can improve on to increase their chances for selection to CD. The interactive model is purposely made as a user-friendly tool so that it can reach its second objective, that is to be usable by COs, XOs, company commanders, and of course, the CD eligible officer. The tool would remain useful as long as the selection rates remain relatively similar and no major policy changes happen that drastically affect the CD process.

B. DATASET

The study's dataset includes the actual CD board population for the eight boards from FY 2010 through FY 2013. The sample is composed of 6,732 observations drawn from MMOA-3, TFDW, and MMSB. The three sources were merged together to complete the five separate samples for studying the selection to CD in the five competitive categories. The final dataset includes 96 independent variables, which are

used in a multivariate data analysis using a Probit model to determine the predicted probability of selection to CD while holding all other observable factors constant.

C. FINDINGS

In order to accomplish its main purpose, the study set out to answer the following research questions:

1. Primary Research Question

- What characteristics are significant in predicting officer selection to career designation in the USMC?

2. Secondary Research Questions

- Does prior enlisted service increase an officer's likelihood for career designation?
- Does commissioning source increase an officer's likelihood for selection to career designation?
- Does a higher score on physical fitness events such as the PFT and CFT increase an officer's likelihood for career designation?
- Does higher than average performance on FITREPs as graded through reporting senior's and reviewing officer's relative value increase an officer's likelihood for career designation?
- Does combat service increase an officer's likelihood for career designation?

As illustrated in Tables 26 through 35 and appendices L and M, several independent variables experienced a change from statistically significant to not significant and vice versa throughout the five models used. The findings summarized in this chapter mainly focus on answering the research questions with results from model five, which is the most comprehensive model. Model five includes variables from all five variables categories of demographics, commissioning, MOS, performance, and experience.

The findings are listed below and are also summarized in a quick reference guide in Appendix P.

3. Combat Arms Competitive Category Full Sample Dataset

- As seen by the result of the ENLPGM commissioning source variable, prior enlisted service does increase the likelihood for CD.
- ENLPGM, NROTC, and OCC commissioning sources all have a higher likelihood for selection than graduates of the USNA.
- A higher score on the PFT does increase the likelihood for selection to CD, while a higher score on the CFT does not.
- As seen by the results of the RV_Pro_Avg, RV_Cum_Avg, and ROCV_Avg variables, higher performance on FITREPs does increase an officer's likelihood for CD.
- One, two, or three-plus combat deployments have a higher likelihood for selection to CD against having zero deployments.

4. Combat Arms Competitive Category FY12 Round 1 through FY13 Round 2 Dataset

- Prior enlisted service effect on CD is inconclusive due to statistically insignificant results in both Prior_Enlisted and ENLPGM variables.
- NROTC and OCC commissioning sources both have a higher likelihood for selection than graduates of the USNA.
- PFT and CFT effect on CD is inconclusive due to statistically insignificant results in both variables.
- As was the case in the full sample dataset, results of the RV_Pro_Avg, RV_Cum_Avg, and ROCV_Avg variables show that higher performance on FITREPs does increase an officer's likelihood for CD.
- One, two, or three-plus combat deployments have a higher likelihood for selection to CD against having zero deployments.

5. Combat Service Support Competitive Category Full Sample Dataset

- As seen by the result of the ENLPGM commissioning source variable, prior enlisted service does increase the likelihood for CD.
- ENLPGM, NROTC, OCC, and PLC commissioning sources all have a higher likelihood for selection than graduates of the USNA.
- A higher score on the PFT does increase the likelihood for selection to CD, while the effect of the CFT score is inconclusive due to a statistically insignificant result on CFT.

- As seen by the results of the RV_Pro_Avg, RV_Cum_Avg, and ROCV_Avg variables, higher performance on FITREPs does increase an officer's likelihood for CD.
- One, two, or three-plus combat deployments have a higher likelihood for selection to CD against having zero deployments.

6. Combat Service Support Competitive Category FY12 Round 1 through FY13 Round 2 Dataset

- Prior enlisted service effect on CD is inconclusive due to statistically insignificant results in both Prior_Enlisted and ENLPGM variables.
- NROTC, OCC, and PLC commissioning sources all have a higher likelihood for selection than graduates of the USNA.
- Higher scores on the PFT and CFT do increase the likelihood for selection to CD.
- As seen by the results of the RV_Pro_Avg, RV_Cum_Avg, and ROCV_Avg variables, higher performance on FITREPs does increase an officer's likelihood for CD.
- Two combat deployments have a higher likelihood for selection to CD against having zero deployments.

7. Aviation-Ground Competitive Category Full Sample Dataset

- As seen by the result of the ENLPGM commissioning source variable, prior enlisted service does increase the likelihood for CD.
- ENLPGM, NROTC, and OCC commissioning sources all have a higher likelihood for selection than graduates of the USNA.
- A higher score on the PFT does increase the likelihood for selection to CD, while the effect of the CFT score is inconclusive due to a statistically insignificant result on CFT.
- As seen by the results of the ROCV_Avg variable, higher performance on FITREPs does increase an officer's likelihood for CD.
- Combat deployment's effect on CD is inconclusive due to statistically insignificant results on the combat deployments variables.

8. Aviation-Ground Competitive Category FY12 Round 1 through FY13 Round 2 Dataset

- As seen by the result of the ENLPGM commissioning source variable, prior enlisted service does increase the likelihood for CD.
- ENLPGM, OCC, and PLC commissioning sources all have a higher likelihood for selection than graduates of the USNA.
- A higher score on the PFT does increase the likelihood for selection to CD, while the effect of the CFT score is inconclusive due to a statistically insignificant result on CFT.
- As seen by the results of the ROCV_Avg variable, higher performance on FITREPs does increase an officer's likelihood for CD.
- Combat deployment's effect on CD is inconclusive due to statistically insignificant results on the combat deployments variables.

9. Law and Aviation Competitive Categories

- The answer to all research questions for the law and aviation competitive categories are inconclusive due to no statistically significant results for model 5 of each category.

D. LIMITATIONS

One of the major limitations of the study is the sample size and selection rate for the law and aviation competitive categories. The small number of observations and high selection rates in these two categories did not provide enough significant variation in the results, which led to no statistically significant variables during the analysis with the study's most comprehensive econometric model. As such, the reader is left with only the preliminary analysis of the summary statistics to view information on the averages of selected and not selected officers during the CD boards.

Another limitation of the study is the inability to use the cumulative reporting senior and reviewing officer relative values that were used during the boards to evaluate CD eligible officers. As previously mentioned, MMSB does not have the capability to see a "snapshot" version of this data. As such, the study had to rely on present data, which was not the same used by the boards, to infer statistical significance of those variables.

The quantitative nature of this research led it to exclude what is widely considered as an essential part of an officer's evaluation: The directed and additional comments from a reporting senior and reviewing officer in sections I and K of the FITREP. Those sections give the RS and RO the ability to paint a "word picture" of the officer in question. It also provides them an opportunity to speak directly to the CD board regarding that officer's current performance and potential for future service. A more qualitative research is necessary to evaluate the effects those comments have on CD.

E. RECOMMENDATIONS

The first recommendation is for the dissemination of the interactive selection counseling models to the career counseling section of MMSB and to any other officer who may be in command of CD eligible Marines. As was the case with Hoffman's model, the goal of the model provided here is not to simply advise an officer of predicted probability for selection, but to let the officer see which factors he can change in order to improve probability. To accomplish that, one must counsel the officer on the factors he actually has control over such as PFT, CFT, or FITREP performance and not on uncontrollable factors such as race, gender, or commissioning source.

The second recommendation is for further research in the law and aviation competitive categories. A multivariate analysis will continue to prove difficult if selection rates remain high and observations remain low. A quantitative study could be possible if selection rates get more competitive in those categories or as time passes by and enough observations are made available. In the meantime, a more qualitative study of those two competitive categories might be necessary to see what qualities cause Marine pilots and lawyers to be selected or not to be selected in those categories.

The third and final recommendation is for the incorporation of Reynolds' ROCV metric as it was used and explained in this study and in Reynolds (2011). It is recommended that the ROCV metric be incorporated into mainstream performance evaluation profiles of reviewing officers. The metric is a more user-friendly alternative to the current RO profile system and it can be easily added to the MBS for quick reference.

APPENDIX A. PHYSICAL FITNESS TEST STANDARDS

6. Performance. The minimum performance requirement for Marines to pass the PFT is to achieve a 3d class score, by age group. Marines must complete the minimum performance requirements in each event and achieve an overall combined score, as shown in Table 2-1.

Age Groups	Pull-Ups/ Flexed Arm	Abdominal Crunches	3.0 Mile Run (Min)	Total Points	Min Score	Additional Points Needed
17-26	3/15(SEC)	50	28(m) 31(f)	105	135	30
27-39	3/15	45	29(m) 32(f)	94	110	16
40-45	3/15	45	30(m) 33(f)	88	88	0
46+	3/15	40	33(m) 36(f)	65	65	0

Table 2-1. -- PFT Minimum Performance Requirements

7. Classification. The minimum performance in each event will not achieve the overall points required for a passing score. Additional points must be earned in at least one event in order to achieve a 3d Class PFT or better, as shown in Table 2-2. Failure to meet the minimum requirements in any one event constitutes a failure of the entire test, regardless of the total number of points earned. Table 1-2 shows the minimum score required, per age group, to earn each PFT classification score. Marines should be encouraged to continually strive to perform their best and not merely accept minimum performance.

PFT Class	Age Groups 17-26	27-39	40-45	46+
1st	225	200	175	150
2d	175	150	125	100
3d	135	110	88	65

Table 2-2. -- PFT Classification Scores

Figure 8. Physical Fitness Test Standards (from Headquarters Marine Corps, 2002)

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APPENDIX B. PFT SCORING TABLE (FEMALES)

Points	Flexed-Arm Hang	Crunches	3-Mile Run	Points	Flexed-Arm Hang	Crunches	3-Mile Run
100	70 sec	100	21:00	50	45 sec	50	29:20
99		99	21:10	49		49	29:30
98	69 sec	98	21:20	48	44 sec	48	29:40
97		97	21:30	47		47	29:50
96	68 sec	96	21:40	46	43 sec	46	30:00
95		95	21:50	45		45	30:10
94	67 sec	94	22:00	44	42 sec	44	30:20
93		93	22:10	43		43	30:30
92	66 sec	92	22:20	42	41 sec	42	30:40
91		91	22:30	41		41	30:50
90	65 sec	90	22:40	40	40 sec	40	31:00
89		89	22:50	39	39 sec	x	31:10
88	64 sec	88	23:00	38	38 sec	x	31:20
87		87	23:10	37	37 sec	x	31:30
86	63 sec	86	23:20	36	36 sec	x	31:40
85		85	23:30	35	35 sec	x	31:50
84	62 sec	84	23:40	34	34 sec	x	32:00
83		83	23:50	33	33 sec	x	32:10
82	61 sec	82	24:00	32	32 sec	x	32:20
81		81	24:10	31	31 sec	x	32:30
80	60 sec	80	24:20	30	30 sec	x	32:40
79		79	24:30	29	29 sec	x	32:50
78	59 sec	78	24:40	28	28 sec	x	33:00
77		77	24:50	27	27 sec	x	33:10
76	58 sec	76	25:00	26	26 sec	x	33:20
75		75	25:10	25	25 sec	x	33:30
74	57 sec	74	25:20	24	24 sec	x	33:40
73		73	25:30	23	23 sec	x	33:50
72	56 sec	72	25:40	22	22 sec	x	34:00
71		71	25:50	21	21 sec	x	34:10
70	55 sec	70	26:00	20	20 sec	x	34:20
69		69	26:10	19	19 sec	x	34:30
68	54 sec	68	26:20	18	18 sec	x	34:40
67		67	26:30	17	17 sec	x	34:50
66	53 sec	66	26:40	16	16 sec	x	35:00
65		65	26:50	15	15 sec	x	35:10
64	52 sec	64	27:00	14	x	x	35:20
63		63	27:10	13	x	x	35:30
62	51 sec	62	27:20	12	x	x	35:40
61		61	27:30	11	x	x	35:50
60	50 sec	60	27:40	10	x	x	36:00
59		59	27:50	9	x	x	X
58	49 sec	58	28:00	8	x	x	X
57		57	28:10	7	x	x	X
56	48 sec	56	28:20	6	x	x	X
55		55	28:30	5	x	x	X
54	47 sec	54	28:40	4	x	x	X
53		53	28:50	3	x	x	X
52	46 sec	52	29:00	2	x	x	X
51		51	29:10	1	x	x	X

*Round up all values (e.g., 21:01 to 21:09 equals 99 points)

Table 2-3. -- PFT Scoring Table (Females)

Figure 9. PFT Scoring Table (Females) (from HQMC, 2002)

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APPENDIX C. PFT SCORING TABLE (MALES)

Points	Pull-ups	Crunches	3-Mile Run	Points	Pull-ups	Crunches	3-Mile Run
100	20	100	18:00	50	10	50	26:20
99		99	18:10	49		49	26:30
98		98	18:20	48		48	26:40
97		97	18:30	47		47	26:50
96		96	18:40	46		46	27:00
95	19	95	18:50	45	9	45	27:10
94		94	19:00	44		44	27:20
93		93	19:10	43		43	27:30
92		92	19:20	42		42	27:40
91		91	19:30	41		41	27:50
90	18	90	19:40	40	8	40	28:00
89		89	19:50	39		x	28:10
88		88	20:00	38		x	28:20
87		87	20:10	37		x	28:30
86		86	20:20	36		x	28:40
85	17	85	20:30	35	7	x	28:50
84		84	20:40	34		x	29:00
83		83	20:50	33		x	29:10
82		82	21:00	32		x	29:20
81		81	21:10	31		x	29:30
80	16	80	21:20	30	6	x	29:40
79		79	21:30	29		x	29:50
78		78	21:40	28		x	30:00
77		77	21:50	27		x	30:10
76		76	22:00	26		x	30:20
75	15	75	22:10	25	5	x	30:30
74		74	22:20	24		x	30:40
73		73	22:30	23		x	30:50
72		72	22:40	22		x	31:00
71		71	22:50	21		x	31:10
70	14	70	23:00	20	4	x	31:20
69		69	23:10	19		x	31:30
68		68	23:20	18		x	31:40
67		67	23:30	17		x	31:50
66		66	23:40	16		x	32:00
65	13	65	23:50	15	3	x	32:10
64		64	24:00	14	x	x	32:20
63		63	24:10	13	x	x	32:30
62		62	24:20	12	x	x	32:40
61		61	24:30	11	x	x	32:50
60	12	60	24:40	10	x	x	33:00
59		59	24:50	9	x	x	x
58		58	25:00	8	x	x	x
57		57	25:10	7	x	x	x
56		56	25:20	6	x	x	x
55	11	55	25:30	5	x	x	x
54		54	25:40	4	x	x	x
53		53	25:50	3	x	x	x
52		52	26:00	2	x	X	x
51		51	26:10	1	x	x	x

*** Round up all values (e.g., 18:01 to 18:09 equals 99 points)**

Table 2-3. -- PFT Scoring Table (Males)

Figure 10. PFT Scoring Table (Males) (from HQMC, 2002)

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APPENDIX D. COMBAT FITNESS TEST STANDARDS

6. Performance. The minimum performance requirements for Marines to pass the CFT are contained in table 3-3. Marines must meet or exceed the minimum performance requirements for each event.

CFT Minimum Requirements				
Male				
	17-26	**27-39**	**40-45**	**46+**
MTC	**4:13**	**4:31**	**5:07**	**5:09**
AL	**33**	**28**	**17**	**16**
MANUF	**3:58**	**4:42**	**5:59**	**6:07**
Female				
	17-26	**27-39**	**40-45**	**46+**
MTC	**5:27**	**5:28**	**5:35**	**5:50**
AL	**17**	**13**	**7**	**6**
MANUF	**5:59**	**6:04**	**6:25**	**6:30**

Table 3-3. -- CFT Minimum Performance Requirements

7. Classification. CFT passing criteria has been derived from extensive testing of a wide sample population representing all demographics that comprise the Marine Corps Total Force. There are no differences or separate events based on gender or age. Maximum and minimum performance criteria were established utilizing specific performance percentiles, by age group. Marines must achieve the minimum performance requirement for all three events to successfully pass the CFT. Failure to meet the minimum requirement in any one event constitutes a failure of the entire test. CFT classifications for males/females for all age groups are as follows:

CFT Classifications	
1st Class	270-300
2d Class	225-269
3rd Class	190-224
Fail	189 and below

Table 3-4. - CFT Classifications

Figure 11. Combat Fitness Test Standards (from HQMC, 2002)

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APPENDIX E. SAMPLE MASTER BRIEF SHEET (MBS)

Master Brief Sheet

PAGE 1 OF 1
CREATED: 15 Apr 2010

******* ADMINISTRATIVE INFORMATION (ORIGINATES FROM MCTFS - CONTACT YOUR ADMIN SECTION FOR CORRECTIONS) *******

NAME	SSN	GRADE	RANK	LCN	DOR	TIG	CURRENT DUTY ASSIGNMENT	BILLET DESCRIPTION	DCTR
MARINE, JOHN S.	123456789	O4	MAJ	12345678	20060501	3yr. 11mo.	US Central Command	J-3 Future Ops Officer	20100302

KEY DATE SUMMARY

DEAF	19951010
TIS	14yr. 11mo.
PEBD	19960125
AFADBD	19960125
OSCD	20050919
ACC COMM	19960403
DOR COMM	199604031
DOR LDO	
DSG PILOT	
DCADB	19960125
EAS	

AWARDS

BS	1	V		
MM	1			
NC	1			
NA	1			

MILITARY OCCUPATIONAL SPECIALTIES

PMOS	0302	Infantry Officer	AMOS4		
AMOS1	0602	Communications Officer	ACQ		
AMOS2			JOINT		
AMOS3			BMOS	9910	Unrestricted Officer

TRAINING SUMMARY

RIFLE	E/40	20040915
PISTOL	S/340	20091112
PFT	A/276	20100330
CFT	A/285	20091218
MCMAP	GREY	20080423

LANGUAGES

1994	French
1990	Spanish

EDUCATION SUMMARY

CIVILIAN		MILITARY		PME	
1990	BA, Biology	1993	Winter Mountain Leader	2002	Command & Staff Non-Res
1986	Associates Deg	1993	Summer Mountain Leader	1997	AWS Ph II
1982	HS	1987	Airborne	1995	AWS Ph I
		1990	Assault Climbers	1994	Warfighting Skills Prog
		1990	Infantry Officer (TBS)		
		1989	Basic School		

******* PERFORMANCE EVALUATION SUMMARY *******

ADMINISTRATIVE SUMMARY						REPORTING SENIOR MARKINGS																REVIEWING OFFICER MARKINGS		
Grade	OCC	From	Months		Billet Description	Reporting Senior		Per	Pro	Cou	Eff	Ini	Lea	Dev	Set	Ens	Co	PME	Dec	Jud	Eval	Reviewing Officer		RO marks - same grade at processing
BMOS	Type	To	Com	Adv	Command	Promote	Reports	RPT Avg		RS Avg		Rs High		RPT at High		RV at Proc		Cum RV				Obser	Concur	RO marks - same grade cumulative
Capt	GC	20050801	9		Company Commander	LtCol Stickler		C	C	B	B	C	C	B	C	C	B	B	B	C	H	Col Spredlode		0/1 0/2 1/3 3/4 2/5 1/6 0/7 0/8
0302	N	20060501	X		1st Battalion 2d Marines	Yes	14 of 17	2.53		2.25		2.82		1		94.60		96.00				Suff	Yes	0/1 1/2 9/3 12/4 23/5 11/6 1/7 0/8
Maj	CH	20060502	3		Operations Officer	LtCol Smidgen		C	C	C	H	C	C	H	C	H	B	H	C	C	H	Col Spredlode		0/1 0/2 1/3 2/4 2/5 2/6 0/7 0/8
0302	C	20060801		X	1st Battalion 2d Marines	Yes	8 of 8	2.88		2.93		3.50		1		89.76		89.76				Suff	Yes	0/1 0/2 2/3 7/4 7/5 5/6 2/7 0/8
Maj	CH	20060802	5		Operations Officer	LtCol Highmark		E	F	E	D	E	E	D	D	D	D	E	E	E	H	Col Fairmark		0/1 0/2 1/3 3/4 2/5 1/6 0/7 0/8
0302	C	20070119			1st Battalion 2d Marines	Yes	3 of 5	4.69		4.94		5.23		2		83.70		81.38				Suff	No	1/1 1/2 2/3 4/4 17/5 12/6 7/7 1/8
Maj	TR	20070120	3		BN Executive Officer	LtCol Solo		B	B	C	B	B	C	B	B	C	B	B	C	B	H	Col Fairmark		0/1 1/2 1/3 3/4 3/5 1/6 0/7 0/8
0302	N	20070414			1st Battalion 2d Marines	Yes	1 of 1	2.30		2.30		2.30		1		N/A		N/A				Suff	Yes	1/1 1/2 2/3 4/4 17/5 12/6 7/7 1/8
Maj	CH	20070415	12		Commanding Officer	Col Inflatorio		F	F	F	F	E	F	E	E	E	E	D	D	E	E	BGen Lowbranch		1/1 0/2 3/3 3/4 18/5 20/6 12/7 0/8
9910	N	20080507	X		MCRS Pittsburg	Yes	21 of 21	5.21		5.12		5.57		1		93.68		93.68				Suff	No	2/1 0/2 5/3 7/4 24/5 26/6 16/7 1/8
Maj	CH	20080508	14		Commanding Officer	Col Eeplus		F	E	E	E	E	F	E	E	E	E	E	E	E	E	BGen Toptree		0/1 1/2 0/3 7/4 38/5 17/6 4/7 0/8
9910	N	20090702			MCRS Pittsburg	Yes	5 of 8	5.14		5.33		5.86		1		83.87		86.44				Suff	Yes	0/1 1/2 0/3 9/4 46/5 19/6 5/7 1/8
Maj	TR	20090703	8		Commanding Officer	Col Deesmost		C	D	D	D	D	C	D	D	C	D	D	D	D	D	BGen Panzer		
9910	N	20100301	X		MCRS Pittsburg	Yes	7 of 12	3.79		4.42		5.00		1		83.67		80.00				Insuff		

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Figure 12. Sample Master Brief Sheet (from HQMC, 2013)

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APPENDIX F. SAMPLE MBS FITNESS REPORT LISTINGS

ADMINISTRATIVE SUMMARY						REPORTING SENIOR MARKINGS																REVIEWING OFFICER MARKINGS									
Grade	OCC	From	Months		Billet Description	Reporting Senior		Pw	Pro	Cou	UT	Int	Lw	Dev	Set	Ens	Co	PME	Dec	Jud	Eml	Reviewing Officer		RO marks - same grade at processing							
BMOS	Type	To	Co	Adv	Command	Promote	Reports	Rpt Avg			RS Avg		RS High		Rpt at High		RV at Proc		Cum RV			Obser	Concur	RO marks - same grade cumulative							
Capt	GC	19990901	9		Company Commander	LtCol B		F	F	D	E	D	E	E	E	D	D	C	E	E	C	Col T		0/1	0/2	1/3	3/4	2/5	1/6	0/7	0/8
0302	N	19990603			1st Battalion 2d Marines	Yes	13 of 16	4.57			3.52		4.57		1		100.00		100.00			Suff	Yes	0/1	0/2	0/3	12/4	23/5	11/6	3/7	0/8
Maj	AN	19990604	3		Operations Officer	LtCol B		E	E	C	E	E	D	D	E	D	E	C	E	D	D	Col R		0/1	0/2	1/3	3/4	2/5	2/6	0/7	0/8
0302	N	19990901			1st Battalion 2d Marines	Yes	4 of 7	4.36			4.13		4.50		1		96.11		96.11			Suff	Yes	0/1	1/2	2/3	7/4	7/5	5/6	0/7	0/8
Maj	CH	19990901	6		Operations Officer	LtCol B		E	E	D	E	E	D	D	E	D	E	C	E	E	D	Col A		0/1	0/2	1/3	3/4	2/5	1/6	0/7	0/8
0302	N	20000119			1st Battalion 2d Marines	Yes	7 of 7	4.50			4.13		4.50		2		100.00		100.00			Suff	Yes	1/1	0/2	2/3	4/4	17/5	13/6	7/7	1/8
Maj	TR	20000119	3		BN Executive Officer	LtCol S		F	F	D	D	G	F	E	F	D	D	D	D	D	E	Col A		0/1	0/2	1/3	3/4	2/5	2/6	0/7	0/8
0302	N	20000414			1st Battalion 2d Marines	Yes	6 of 14	4.93			4.46		4.93		1		100.00		100.00			Suff	Yes	1/1	0/2	2/3	4/4	17/5	13/6	7/7	1/8

A. ADMINISTRATIVE SUMMARY

1. GRADE. This information reflects the MRO's grade per section A, item 1e (Grade), of the fitness report.

2. BMOS. This information reflects the billet MOS of the duty to which the MRO was assigned per section A, item h (BILMOS) of the fitness report.

3. OCC. This information reflects the occasion for submitting the report per section A, item 3a (OCC) of the fitness report.

4. TYPE DUTY. This information reflects the type of the MRO's duty per section A, item 3c (Type), of the fitness report. The letters indicating the type duty are "A" (Academic & Training Duty), "N" (Normal peace time reporting), "C" (Combat), "J" (Joint Duty), and "B" (both Combat and Joint).

5. FROM DATE/TO DATE

a. FROM DATE. This information reflects the beginning date of the reporting period per section A, item 3b (From) of the fitness report.

b. TO DATE. This information reflects the ending date of the reporting period per section A, item 3b (To) of the fitness report.

6. MONTHS. Number of months covered by the specific fitness report.

7. COM. An "X" appearing under this column indicates that the MRO was subject to commendatory material during the reporting period per section A, item 6a (Marine Subject of Commendatory Material) of the fitness report.

8. ADV. An "X" appearing under this column indicates the report is adverse. per section A, item 5a (Special Case: Adverse)or item 6b (Derogatory Material) or item 6c (Disciplinary Action) of the fitness report.

9. BILLET DESCRIPTION. This information reflects the primary duty to which the MRO was assigned per section A, item 4 (Duty Assignment (descriptive title)), of the fitness report.

10. COMMAND. This information reflects the specific command or unit to which the MRO was assigned for duty per section A, item 2b, (RUC), of the fitness report.

B. REPORTING SENIOR MARKINGS

1. REPORTING SENIOR. This information reflects the name of the MRO's RS per section A, item 10 (Reporting Senior), of the fitness report.

2. MISSION/CHARACTER/LEADERSHIP/INTELLECT/EVAL RESP. This information reflects the markings from the Performance Anchored Rating Scales per section D (MISSION ACCOMPLISHMENT), E (INDIVIDUAL CHARACTER), F (LEADERSHIP), G(INTELLECT AND WISDOM), and H *(FULFILLMENT OF EVALUATION RESPONSIBILITIES) of the fitness report. Abbreviations for the individual attributes as reflected on the MBS are:

PER-Performance	LEA-Leading Subordinates	PME-Professional Military Education
PRO-Proficiency	DEV-Develop Subordinates	DEC-Decision Making Ability
COU-Courage	SET-Setting the Example	JUD-Judgment
EFF-Effectiveness Under Stress	ENS-Ensuring Well-Being of Subordinates	*EVAL-Evaluation Responsibilities
INI-Initiative	CO-Communication Skills	

* Applies to MRO's with fitness reporting official responsibilities.

3. PROMOTE. This information reflects the RS's promotion recommendation for the MRO per section A, item 7 (Recommended for Promotion). A "NO" indicates not recommended for promotion. An "NA" indicates not applicable. An "ACC" indicates a recommendation for accelerated promotion.

4. REPORTS. The number before "of" indicates at processing what report this was the RS had submitted on Marines of this grade. The number after "of" is the total number of cumulative reports to date on Marines of this grade.

5. RPT AVG. This information reflects the report's average of the observed attributes.

6. RS AVG. This information reflects the cumulative average of all reports written by the RS on a Marine of that grade.

7. RS HIGH. This information reflects the highest fitness report average of any report written by the RS on a Marine of that grade.

8. RPT AT HIGH. This information reflects the number of reports the RS submitted which have a relative average of 100.

9. RV AT PROC. This column reflects the relative value of the MRO's fitness report based on the RS's rating history for Marines of the same grade as the MRO as of the time of processing of the MRO's report (see Appendix G).

10. CUM RV. This column reflects the cumulative relative value of all fitness reports written by the RS on Marines of this grade at the time the MBS is produced. NOTE: This percentage is a variable and will change as the RS writes additional reports on Marines of the same grade as the MRO's grade on the report in question.

C. REVIEWING OFFICER MARKINGS

1. REVIEWING OFFICER. This information reflects the name of the MRO's RO per section A, item 11 (Reviewing Officer), of the fitness report.

2. RO REMARKS -SAME GRADE AT PROCESSING. This information will show the RO's comparative assessment marks of section K, block 3 for all fitness reports of Marines of the same grade evaluated by the RO at the time the report was processed.

3. OBSER. This reflects the degree of observation the RO had of the MRO as indicated in section K, item 1.

4. CONCUR. This information reflects whether the RO concurs or does not concur with the RS's evaluation of the MRO per section K, item 2 (Evaluation) of the fitness report. A "YES" appearing in this column indicates the RO concurs with the report. A "NO" appearing in the column indicates the RO does not concur with the report.

5. RO MARKS - SAME GRADE CUMULATIVE. This information shows the cumulative comparative assessment (pyramid) marks of section K, block 3 of all reports ever reviewed by the RO on all Marines of the same grade as the MRO with the assessment of this fitness report highlighted by a square frame. NOTE: This number is dynamic and will change as the RO writes additional reports on Marines of the same grade as the MRO's grade on this report.

Figure 13. Sample MBS FITREP Listings (from HQMC, 2006)

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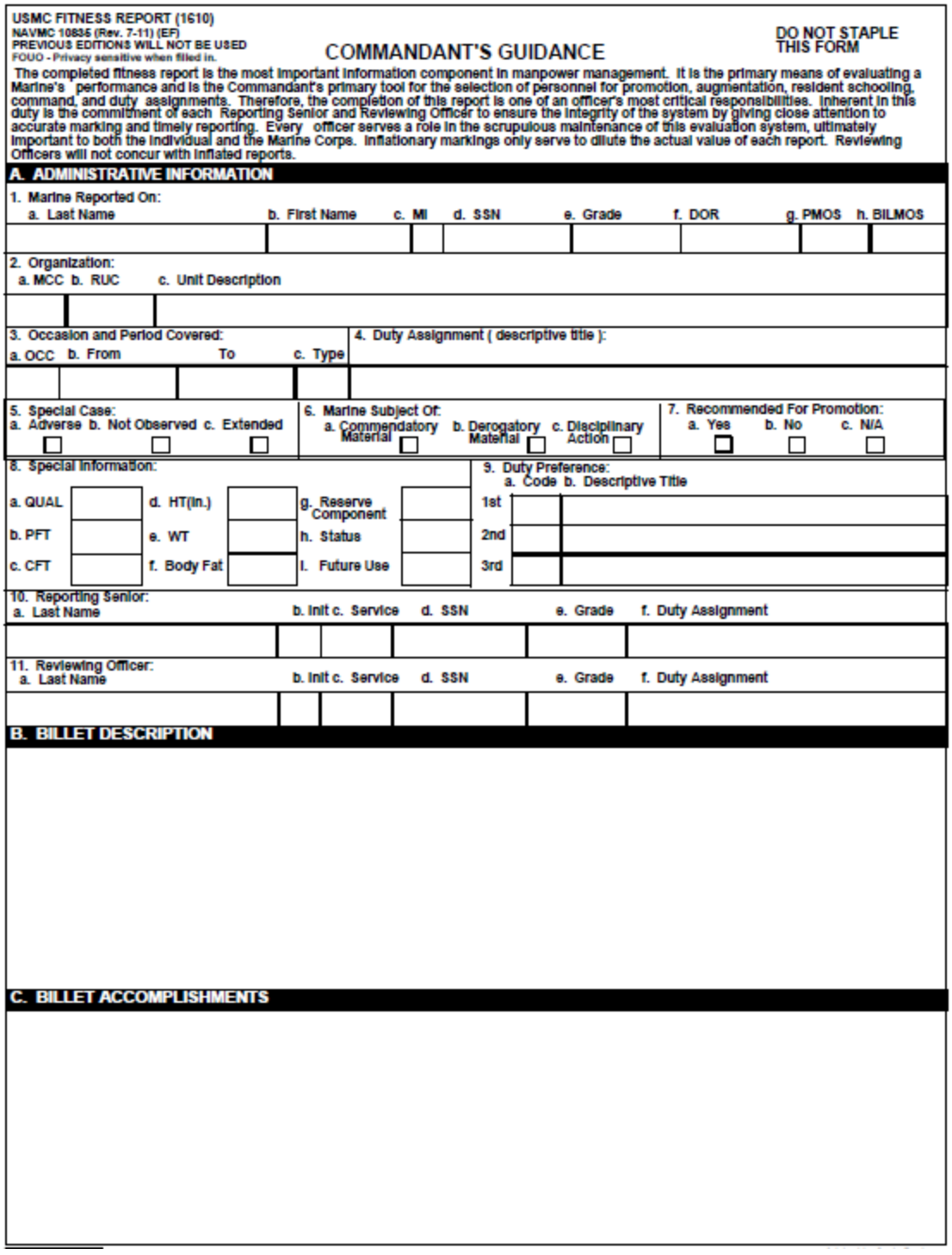
APPENDIX G. MARINE CORPS FITNESS REPORT



USMC FITNESS REPORT (1610)
NAVMC 10835 (Rev. 7-11) (EF)
PREVIOUS EDITIONS WILL NOT BE USED
FOUO - Privacy sensitive when filled in.

DO NOT STAPLE THIS FORM

COMMANDANT'S GUIDANCE

The completed fitness report is the most important information component in manpower management. It is the primary means of evaluating a Marine's performance and is the Commandant's primary tool for the selection of personnel for promotion, augmentation, resident schooling, command, and duty assignments. Therefore, the completion of this report is one of an officer's most critical responsibilities. Inherent in this duty is the commitment of each Reporting Senior and Reviewing Officer to ensure the integrity of the system by giving close attention to accurate marking and timely reporting. Every officer serves a role in the scrupulous maintenance of this evaluation system, ultimately important to both the individual and the Marine Corps. Inflationary markings only serve to dilute the actual value of each report. Reviewing Officers will not concur with inflated reports.

A. ADMINISTRATIVE INFORMATION

1. Marine Reported On:
a. Last Name | b. First Name | c. MI | d. SSN | e. Grade | f. DOR | g. PMOS | h. BILMOS

2. Organization:
a. MCC | b. RUC | c. Unit Description

3. Occasion and Period Covered:
a. OCC | b. From | To | c. Type

4. Duty Assignment (descriptive title):

5. Special Case:
a. Adverse ☐ b. Not Observed ☐ c. Extended ☐

6. Marine Subject Of:
a. Commendatory Material ☐ b. Derogatory Material ☐ c. Disciplinary Action ☐

7. Recommended For Promotion:
a. Yes ☐ b. No ☐ c. N/A ☐

8. Special Information:
a. QUAL | d. HT(In.) | g. Reserve Component
b. PFT | e. WT | h. Status
c. CFT | f. Body Fat | I. Future Use

9. Duty Preference:
a. Code | b. Descriptive Title
1st
2nd
3rd

10. Reporting Senior:
a. Last Name | b. Init | c. Service | d. SSN | e. Grade | f. Duty Assignment

11. Reviewing Officer:
a. Last Name | b. Init | c. Service | d. SSN | e. Grade | f. Duty Assignment

B. BILLET DESCRIPTION

C. BILLET ACCOMPLISHMENTS

1. Marine Reported On: a. Last Name	b. First Name	c. MI	d. SSN	2. Occasion and Period Covered: a. OCC	b. From	To

D. MISSION ACCOMPLISHMENT

1. PERFORMANCE. Results achieved during the reporting period. How well those duties inherent to a Marine's billet, plus all additional duties, formally and informally assigned, were carried out. Reflects a Marine's aptitude, competence, and commitment to the unit's success above personal reward. Indicators are time and resource management, task prioritization, and tenacity to achieve positive ends consistently.

ADV				N/O
	Meets requirements of billet and additional duties. Aptitude, commitment, and competence meet expectations. Results maintain status quo.	Consistently produces quality results while measurably improving unit performance. Habitually makes effective use of time and resources; improves billet procedures and products. Positive impact extends beyond billet expectations.	Results far surpass expectations. Recognizes and exploits new resources; creates opportunities. Emulated; sought after as an expert with influence beyond unit. Impact significant; innovative approaches to problems produce significant gains in quality and efficiency.	

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

2. PROFICIENCY. Demonstrates technical knowledge and practical skill in the execution of the Marine's overall duties. Combines training, education and experience. Translates skills into actions which contribute to accomplishing tasks and missions. Imparts knowledge to others. Grade dependent.

ADV				N/O
	Competent. Possesses the requisite range of skills and knowledge commensurate with grade and experience. Understands and articulates basic functions related to mission accomplishment.	Demonstrates mastery of all required skills. Expertise, education and experience consistently enhance mission accomplishment. Innovative troubleshooter and problem solver. Effectively imparts skills to subordinates.	True expert in field. Knowledge and skills impact far beyond those of peers. Translates broad-based education and experience into forward thinking, innovative actions. Makes immeasurable impact on mission accomplishment. Peerless teacher, selflessly imparts expertise to subordinates, peers, and seniors.	

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

JUSTIFICATION:

E. INDIVIDUAL CHARACTER

1. COURAGE. Moral or physical strength to overcome danger, fear, difficulty or anxiety. Personal acceptance of responsibility and accountability, placing conscience over competing interests regardless of consequences. Conscious, overriding decision to risk bodily harm or death to accomplish the mission or save others. The will to persevere despite uncertainty.

ADV				N/O
	Demonstrates inner strength and acceptance of responsibility commensurate with scope of duties and experience. Willing to face moral or physical challenges in pursuit of mission accomplishment.	Guided by conscience in all actions. Proven ability to overcome danger, fear, difficulty or anxiety. Exhibits bravery in the face of adversity and uncertainty. Not deterred by morally difficult situations or hazardous responsibilities.	Uncommon bravery and capacity to overcome obstacles and inspire others in the face of moral dilemma or life-threatening danger. Demonstrated under the most adverse conditions. Selfless. Always places conscience over competing interests regardless of physical or personal consequences.	

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

2. EFFECTIVENESS UNDER STRESS. Thinking, functioning and leading effectively under conditions of physical and/or mental pressure. Maintaining composure appropriate for the situation, while displaying steady purpose of action, enabling one to inspire others while continuing to lead under adverse conditions. Physical and emotional strength, resilience and endurance are elements.

ADV				N/O
	Exhibits discipline and stability under pressure. Judgment and effective problem-solving skills are evident.	Consistently demonstrates maturity, mental agility and willpower during periods of adversity. Provides order to chaos through the application of intuition, problem-solving skills, and leadership. Composure reassures others.	Demonstrates seldom-matched presence of mind under the most demanding circumstances. Stabilizes any situation through the resolute and timely application of direction, focus and personal presence.	

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

3. INITIATIVE. Action in the absence of specific direction. Seeing what needs to be done and acting without prompting. The instinct to begin a task and follow through energetically on one's own accord. Being creative, proactive and decisive. Transforming opportunity into action.

ADV				N/O
	Demonstrates willingness to take action in the absence of specific direction. Acts commensurate with grade, training and experience.	Self-motivated and action-oriented. Foresight and energy consistently transform opportunity into action. Develops and pursues creative, innovative solutions. Acts without prompting. Self-starter.	Highly motivated and proactive. Displays exceptional awareness of surroundings and environment. Uncanny ability to anticipate mission requirements and quickly formulate original, far-reaching solutions. Always takes decisive, effective action.	

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

JUSTIFICATION:

1. Marine Reported On: a. Last Name	b. First Name	c. MI	d. SSN	2. Occasion and Period Covered: a. OCC	b. From	To

F. LEADERSHIP

1. LEADING SUBORDINATES. The inseparable relationship between leader and led. The application of leadership principles to provide direction and motivate subordinates. Using authority, persuasion and personality to influence subordinates to accomplish assigned tasks. Sustaining motivation and morale while maximizing subordinates' performance.

ADV						N/O
	Engaged; provides instructions and directs execution. Seeks to accomplish mission in ways that sustain motivation and morale. Actions contribute to unit effectiveness.		Achieves a highly effective balance between direction and delegation. Effectively tasks subordinates and clearly delineates standards expected. Enhances performance through constructive supervision. Fosters motivation and enhances morale. Builds and sustains teams that successfully meet mission requirements. Encourages initiative and candor among subordinates.		Promotes creativity and energy among subordinates by striking the ideal balance of direction and delegation. Achieves highest levels of performance from subordinates by encouraging individual initiative. Engenders willing subordination, loyalty, and trust that allow subordinates to overcome their perceived limitations. Personal leadership fosters highest levels of motivation and morale, ensuring mission accomplishment even in the most difficult circumstances.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

2. DEVELOPING SUBORDINATES. Commitment to train, educate, and challenge all Marines regardless of race, religion, ethnic background, or gender. Mentorship. Cultivating professional and personal development of subordinates. Developing team players and esprit de corps. Ability to combine teaching and coaching. Creating an atmosphere tolerant of mistakes in the course of learning.

ADV						N/O
	Maintains an environment that allows personal and professional development. Ensures subordinates participate in all mandated development programs.		Develops and institutes innovative programs, to include PME, that emphasize personal and professional development of subordinates. Challenges subordinates to exceed their perceived potential thereby enhancing unit morale and effectiveness. Creates an environment where all Marines are confident to learn through trial and error. As a mentor, prepares subordinates for increased responsibilities and duties.		Widely recognized and emulated as a teacher, coach and leader. Any Marine would desire to serve with this Marine because they know they will grow personally and professionally. Subordinate and unit performance far surpassed expected results due to MRO's mentorship and team building talents. Attitude toward subordinate development is infectious, extending beyond the unit.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

3. SETTING THE EXAMPLE. The most visible facet of leadership: how well a Marine serves as a role model for all others. Personal action demonstrates the highest standards of conduct, ethical behavior, fitness, and appearance. Bearing, demeanor, and self-discipline are elements.

ADV						N/O
	Maintains Marine Corps standards for appearance, weight, and uniform wear. Sustains required level of physical fitness. Adheres to the tenets of the Marine Corps core values.		Personal conduct on and off duty reflects highest Marine Corps standards of integrity, bearing and appearance. Character is exceptional. Actively seeks self-improvement in wide-ranging areas. Dedication to duty and professional example encourage others' self-improvement efforts.		Model Marine, frequently emulated. Exemplary conduct, behavior, and actions are tone-setting. An inspiration to subordinates, peers, and seniors. Remarkable dedication to improving self and others.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

4. ENSURING WELL-BEING OF SUBORDINATES. Genuine interest in the well-being of Marines. Efforts enhance subordinates' ability to concentrate/focus on unit mission accomplishment. Concern for family readiness is inherent. The importance placed on welfare of subordinates is based on the belief that Marines take care of their own.

ADV						N/O
	Deals confidently with issues pertinent to subordinate welfare and recognizes suitable courses of action that support subordinates' well-being. Applies available resources, allowing subordinates to effectively concentrate on the mission.		Instills and/or reinforces a sense of responsibility among junior Marines for themselves and their subordinates. Actively fosters the development of and uses support systems for subordinates which improve their ability to contribute to unit mission accomplishment. Efforts to enhance subordinate welfare improve the unit's ability to accomplish its mission.		Noticeably enhances subordinates well-being, resulting in a measurable increase in unit effectiveness. Maximizes unit and base resources to provide subordinates with the best support available. Proactive approach serves to energize unit members to "take care of their own," thereby correcting potential problems before they can hinder subordinates' effectiveness. Widely recognized for techniques and policies that produce results and build morale. Builds strong family atmosphere. Puts motto *Mission first, Marines always* , into action.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

5. COMMUNICATION SKILLS. The efficient transmission and receipt of thoughts and ideas that enable and enhance leadership. Equal importance given to listening, speaking, writing, and critical reading skills. Interactive, allowing one to perceive problems and situations, provide concise guidance, and express complex ideas in a form easily understood by everyone. Allows subordinates to ask questions, raise issues and concerns and venture opinions. Contributes to a leader's ability to motivate as well as counsel.

ADV						N/O
	Skilled in receiving and conveying information. Communicates effectively in performance of duties.		Clearly articulates thoughts and ideas, verbally and in writing. Communication in all forms is accurate, intelligent, concise, and timely. Communicates with clarity and verve, ensuring understanding of intent or purpose. Encourages and considers the contributions of others.		Highly developed facility in verbal communication. Adept in composing written documents of the highest quality. Combines presence and verbal skills which engender confidence and achieve understanding irrespective of the setting, situation, or size of the group addressed. Displays an intuitive sense of when and how to listen.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

JUSTIFICATION:

1. Marine Reported On: a. Last Name	b. First Name	c. MI	d. SSN	2. Occasion and Period Covered: a. OCC	b. From	To

G. INTELLECT AND WISDOM

1.PROFESSIONAL MILITARY EDUCATION (PME). Commitment to intellectual growth in ways beneficial to the Marine Corps. Increases the breadth and depth of warfighting and leadership aptitude. Resources include resident schools; professional qualifications and certification processes; nonresident and other extension courses; civilian educational institution coursework; a personal reading program that includes (but is not limited to) selections from the Commandant's Reading List; participation in discussion groups and military societies; and involvement in learning through new technologies.

ADV							N/O
	Maintains currency in required military skills and related developments. Has completed or is enrolled in appropriate level of PME for grade and level of experience. Recognizes and understands new and creative approaches to service issues. Remains abreast of contemporary concepts and issues.		PME outlook extends beyond MOS and required education. Develops and follows a comprehensive personal program which includes broadened professional reading and/or academic course work; advances new concepts and ideas.		Dedicated to life-long learning. As a result of active and continuous efforts, widely recognized as an intellectual leader in professionally related topics. Makes time for study and takes advantage of all resources and programs. Introduces new and creative approaches to services issues. Engages in a broad spectrum of forums and dialogues.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

2. DECISION MAKING ABILITY. Viable and timely problem solution. Contributing elements are judgment and decisiveness. Decisions reflect the balance between an optimal solution and a satisfactory, workable solution that generates tempo. Decisions are made within the context of the commander's established intent and the goal of mission accomplishment. Anticipation, mental agility, intuition, and success are inherent.

ADV							N/O
	Makes sound decisions leading to mission accomplishment. Actively collects and evaluates information and weighs alternatives to achieve timely results. Confidently approaches problems; accepts responsibility for outcomes.		Demonstrates mental agility; effectively prioritizes and solves multiple complex problems. Analytical abilities enhanced by experience, education, and intuition. Anticipates problems and implements viable, long-term solutions. Steadfast, willing to make difficult decisions.		Widely recognized and sought after to resolve the most critical, complex problems. Seldom matched analytical and intuitive abilities; accurately foresees unexpected problems and arrives at well-timed decisions despite fog and friction. Completely confident approach to all problems. Masterfully strikes a balance between the desire for perfect knowledge and greater tempo.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

3. JUDGMENT. The discretionary aspect of decision making. Draws on core values, knowledge, and personal experience to make wise choices. Comprehends the consequences of contemplated courses of action.

ADV							N/O
	Majority of judgments are measured, circumspect, relevant and correct.		Decisions are consistent and uniformly correct, tempered by consideration of their consequences. Able to identify, isolate and assess relevant factors in the decision making process. Opinions sought by others. Subordinates personal interest in favor of impartiality.		Decisions reflect exceptional insight and wisdom beyond this Marine's experience. Counsel sought by all; often an arbiter. Consistent, superior judgment inspires the confidence of seniors.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

JUSTIFICATION:

H. FULFILLMENT OF EVALUATION RESPONSIBILITIES

1. EVALUATIONS. The extent to which this officer serving as a reporting official conducted, or required others to conduct, accurate, uninflated, and timely evaluations.

ADV							N/O
	Occasionally submitted untimely or administratively incorrect evaluations. As RS, submitted one or more reports that contained inflated markings. As RO, concurred with one or more reports from subordinates that were returned by HQMC for inflated marking.		Prepared uninflated evaluations which were consistently submitted on time. Evaluations accurately described performance and character. Evaluations contained no inflated markings. No reports returned by RO or HQMC for inflated marking. No subordinates' reports returned by HQMC for inflated marking. Few, if any, reports were returned by RO or HQMC for administrative errors. Section Cs were void of superlatives. Justifications were specific, verifiable, substantive, and where possible, quantifiable and supported the markings given.		No reports submitted late. No reports returned by either RO or HQMC for administrative correction or inflated markings. No subordinates' reports returned by HQMC for administrative correction or inflated markings. Returned procedurally or administratively incorrect reports to subordinates for correction. As RO nonconcurred with all inflated reports.		

A	B	C	D	E	F	G	H
☐	☐	☐	☐	☐	☐	☐	☐

JUSTIFICATION:

1. Marine Reported On: a. Last Name | b. First Name | c. MI | d. SSN | 2. Occasion and Period Covered: a. OCC | b. From | To

I. DIRECTED AND ADDITIONAL COMMENTS

J. CERTIFICATION

1. I CERTIFY that to the best of my knowledge and belief all entries made hereon are true and without prejudice or partiality and that I have provided a signed copy of this report to the Marine Reported on.

(Signature of Reporting Senior) (Date in YYYYMMDD format)

2. I ACKNOWLEDGE the adverse nature of this report and

☐ I have no statement to make

☐ I have attached a statement

(Signature of Marine Reported On) (Date in YYYYMMDD format)

K. REVIEWING OFFICER COMMENTS

1. OBSERVATION: ☐ Sufficient ☐ Insufficient

2. EVALUATION: ☐ Concur ☐ Do Not Concur

3. COMPARATIVE ASSESSMENT: Provide a comparative assessment of potential by placing an "X" in the appropriate box. In marking the comparison, consider all Marines of this grade whose professional abilities are known to you personally.

DESCRIPTION	COMPARATIVE ASSESSMENT
THE EMINENTLY QUALIFIED MARINE	☐
ONE OF THE FEW	☐
EXCEPTIONALLY QUALIFIED MARINES	☐
ONE OF THE MANY HIGHLY QUALIFIED	☐
PROFESSIONALS WHO FORM THE	☐
MAJORITY OF THIS GRADE	☐
A QUALIFIED MARINE	☐
UNSATISFACTORY	☐

4. REVIEWING OFFICER COMMENTS: Amplify your comparative assessment mark; evaluate potential for continued professional development to include: promotion, command, assignment, resident PME, and retention; and put Reporting Senior marks and comments in perspective.

5. I CERTIFY that to the best of my knowledge and belief all entries made hereon are true and without prejudice or partiality.

(Signature of Reviewing Officer) (Date in YYYYMMDD format)

6. I ACKNOWLEDGE the adverse nature of this report and

☐ I have no statement to make

☐ I have attached a statement

(Signature of Marine Reported On) (Date in YYYYMMDD format)

L. ADDENDUM PAGE

ADDENDUM PAGE ATTACHED: ☐ YES

Figure 14. Blank USMC FITREP (from HQMC, 2006)

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APPENDIX H. REPORTING SENIOR AND REVIEWING OFFICER PROFILES

A. BACKGROUND. The RS Profile on pages 4 and 5 of this Appendix is a key tool for use in accomplishing the objectives of the PES and outlines the grading history of an RS (see paragraph 8012).

B. CONTENTS OF THE PROFILE

1. The profile provides a cumulative rating history of all reports written by an RS. The RS profile does not include academic, end of service, extended, and not observed fitness reports in the number of reports; nor are they computed into the RS's cumulative averages.

2. The profile lists the following information:

a. Listing of grades (excluding general officers) for Marines eligible to receive fitness reports (GRADE).

b. Average of the fitness report averages for all reports (excluding academic type, end of service, extended, and not observed reports) submitted by the RS for each grade (AVG).

c. Total number of reports written by the RS for each grade (excluding academic, end of service, extended, and not observed reports) (# OF RPTS).

d. The highest fitness report average submitted by the RS for a particular grade (HIGH).

e. The lowest fitness report average submitted by the RS for a particular grade (LOW).

f. The number of reports signed by the RS 30 days from the ending date of the report.

C. CALCULATING PROFILE DATA

1. Fitness report average for an individual report.

a. Each block in the marking gradient for each PARS has an assigned numeric value as follows: A=1, B=2, C=3, D=4, E=5, F=6, G=7, and H (not observed)=0. NOTE: Block H (not observed) has no value and does not factor into the calculation of the average.

b. The average of observed attributes reflects the mean of the numeric value for all observed attributes on that report rounded to the nearest hundredth.

2. Reporting senior's average of all fitness reports written on Marines of similar grade. This average reflects the mean of the numeric value for all fitness reports (excluding academic type, end of service, extended, and not observed reports) written by the RS on Marines of similar grade.

3. Reporting senior's highest fitness report average of any report written on Marines of similar grade. This value reflects the highest fitness report

average of any report written by the RS on Marines of similar grade (excluding academic type, end of service, extended, and not observed reports).

4. Reporting Senior's lowest fitness report average of any report written on Marines of similar grade. This value reflects the lowest fitness report average of any report written by the RS on Marines of similar grade (excluding academic type, end of service, extended, and not observed reports).

5. The number of reports signed by the RS 30 days from the ending date of the report. This number reflects the number of reports signed by the RS that HQMC received 30 days or more after the ending date of the report. NOTE: The basis for accountability for late submission of reports is HQMC tracking of reporting officials' signature dates. As an example: if the RS is timely in completing and forwarding the report to the RO (as evidenced by the signature date) responsibility will shift to another reporting official (RO, third officer, or senior Marine representative) or operational Battalion/Squadron command element, as appropriate.

6. The number of reports submitted by the RO received at HQMC 60 or more days after the end of the reporting period or 30 days from the end date if the RS was counted late on the report.

D. RELATIVE VALUE OF A REPORT

1. The relative value of a report reflects how the fitness report average of an individual report compares to:

a. The RS's average of all fitness reports written by the RS on Marines of the same grade.

b. The highest fitness report average of any report written by the RS on a Marine of the same grade as the MRO.

2. The system will calculate the relative value for each report to reflect both:

a. The relative value at the time of processing. This numeric value reflects the relative value of the MRO's fitness report based on the RS's rating history for Marines of the same grade as the MRO as of the time of processing of the MRO's report. This number is a constant and once calculated, it will not change.

b. The cumulative relative value. This numeric value reflects the cumulative relative value of the MRO's fitness report based on the RS's rating history for Marines of the same grade as the MRO. This number is a variable and will change as the RS writes additional reports on Marines of the same grade as the MRO.

c. The fitness report average. The report's average of the observed attributes.

d. The reporting senior cumulative average. The cumulative average of all reports written by the RS on Marines of the same grade.

e. The reporting senior high. The highest fitness report average of any report written by the RS on a Marine of that grade.

3. Once calculated, the relative value will appear on the MRO's MBS in numeric fashion on a 80 to 100 scale.

a. A relative value of 100 indicates the report has the highest fitness report average of any report written by the RS on a Marine of that grade.

b. A relative value of 80 indicates the report has the lowest fitness report average of any report written by the RS on a Marine of that grade.

c. A relative value of 90 indicates the fitness report average for the report is equal to the RS average. (The average of the fitness report average for all reports written by the RS on Marines of the same grade.)

4. Appendix K (MASTER BRIEF SHEET (MBS), FITNESS REPORT LISTING), depicts how the relative value data is displayed on the MBS.

E. REVIEWING OFFICER PROFILE

1. A comparative assessment of the Reviewing Officer's (RO) rankings for all fitness reports of Marines of the same grade will be included on the Master Brief Sheet (MBS). The status of the RO does not affect the RO's profile; whether on active duty or a civilian, the RO will only maintain one profile.

2. This information will show the cumulative comparative assessment (pyramid) marks of all fitness reports of Marines of the same grade evaluated by this RO, with the assessment of each fitness report highlighted with a frame, as seen in Appendix K.

3. This information will be displayed on a new row beneath the line of fitness reports attributes in line with the RO name, and will be updated as additional fitness reports are processed with the same RO.

4. When a fitness report is processed for posting to the OMPF, the RO profile will be overlaid to the left of the pyramid in section K on page 5 of the report.

5. An example of a RO Comparative Assessment Profile is contained on pages 6 and 7 of this Appendix.

Figure 15. Reporting Senior and Reviewing Officer Profiles (from HQMC, 2006)

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APPENDIX I. CALCULATING RELATIVE VALUE

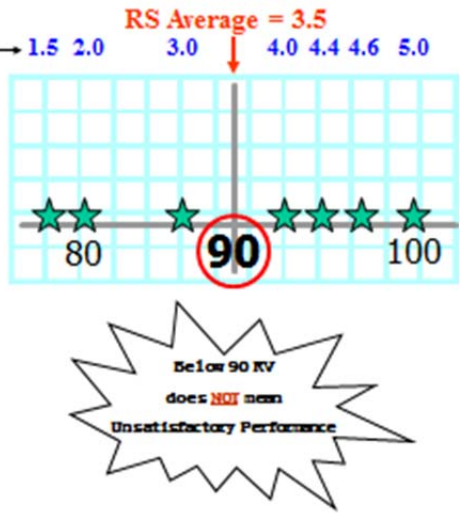
What is Relative Value?

- RV is a numerical representation of how a single fitness report compares to other reports written by the same RS on Marines of the same grade
- RV= TOOL that displays RS's marking philosophy
- RV should be used within the context of **all** other information on the report
- RV=Common Language that translates the RS's Marking Philosophy (fitrep average) by grade of Marine reported on
- RV Levels the playing field among RSs reporting on Marines of the same grade

MMSB 5

How does RV Work?

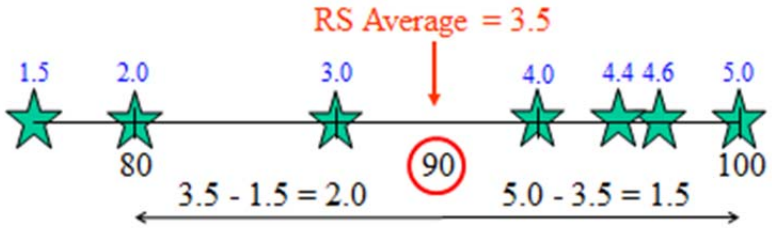
- First, you must calculate the Fitrep Average.
- Each of 14 attributes has a value from A through H:
  A=1, B=2, C=3, D=4, E=5, F=6, G=7, H=Not Observed
- Avg. of all observed attributes=Fitrep Average
  - i.e. a straight B report (28/14) = 2.0
- Then, you calculate the Relative Value, which works off of a linear scaled from 80 to 100
  100=Highest report written by that RS on that grade.
  90=RS's Avg of all reports for that grade.
  80 is determined by finding the difference between the 100 and the 90, then subtracting that from the 90.
- RS average (90) derived from the total value of all observed reports divided by the total number of observed reports
  1.5+2.0+3.0+4.0+4.4+4.6+5.0/7=3.5
- RS must process at least three reports on Marines of the same grade before RV is displayed on MBS
- REMEMBER: Approximately Half of all observed fitreps (Sgt – LtCol) will be less than 90 RV



MMSB 6

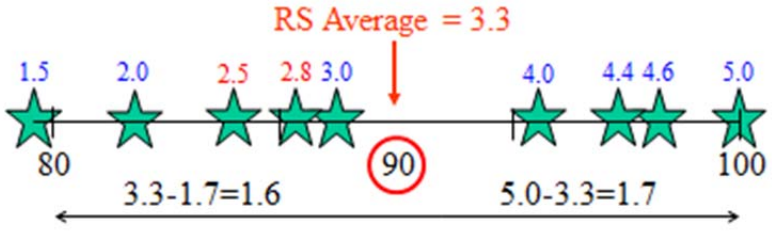
How FRAs Become Relative Value

- The 80 is determined by finding the difference between the RS High and the RS Average, then subtracting the difference from the RS Average.



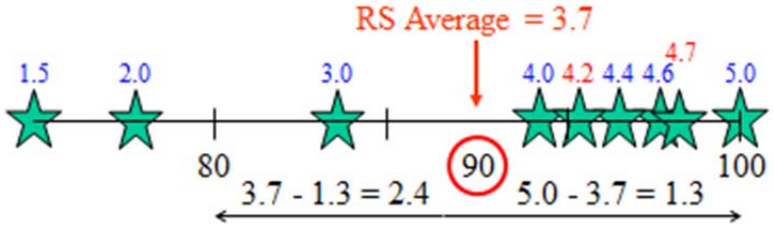
How FRAs Become Relative Value

- Same profile, but you write 2 more reports with averages below your RS average, lowering your RS average.
- As your RS average decreases, your profile "envelope" expands.



How FRAs Become Relative Value

- Same profile, but you write two more reports with averages above your RS average, raising your RS average.
- As your RS average increases, your profile "envelope" shrinks.



MMSB 9

What do the numbers mean?

- **It is of the utmost importance to remember that the context of the particular report is always important!**

- **Relative Value**
  - 90 RV is not the magic #
  - RV broken down into thirds
    - Upper: 93.34 to 100
    - Middle: 86.67 to 93.33
    - Lower: 80.00 to 86.66

- Para 4006.4.b, "Grades are earned by the MRO's displayed efforts and apparent results; they are not given to attain a perceived fitness report average or relative value."

MMSB 10

Figure 16. Calculating Relative Value (from HQMC, 2013)

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APPENDIX J. CALCULATING ROCV AVERAGES

1. ***Find RO's Multiplied Average Assessment Value:***

   Tot Value of Assessments / Tot Assessments = RO Multiplied Avg

2. ***Calculate ROCV:***

   MRO Assessment Score - RO Multiplied Avg = ROCV

Figure 18. Computing ROCV

The resulting ROCV numeric yields a "distance from," or "tree levels" above/below, the RO's average value on the comparative assessment tree. For example, a ROCV value of +1.00 means that the MRO's relative assessment is one entire "tree level" higher than the RO's average on the comparative assessment (see Figure 19 for a detailed example). The ROCV does not produce an absolute "tree level" from which to compare MROs, or groups of MROs. Instead, the ROCV simply quantifies the numbers of levels (+/-) the particular MRO (or group) tends to vary from an RO's cumulative average.

Figure 17. Calculating ROCV Averages (from Reynolds, 2011)

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APPENDIX K. ROCV EXAMPLE

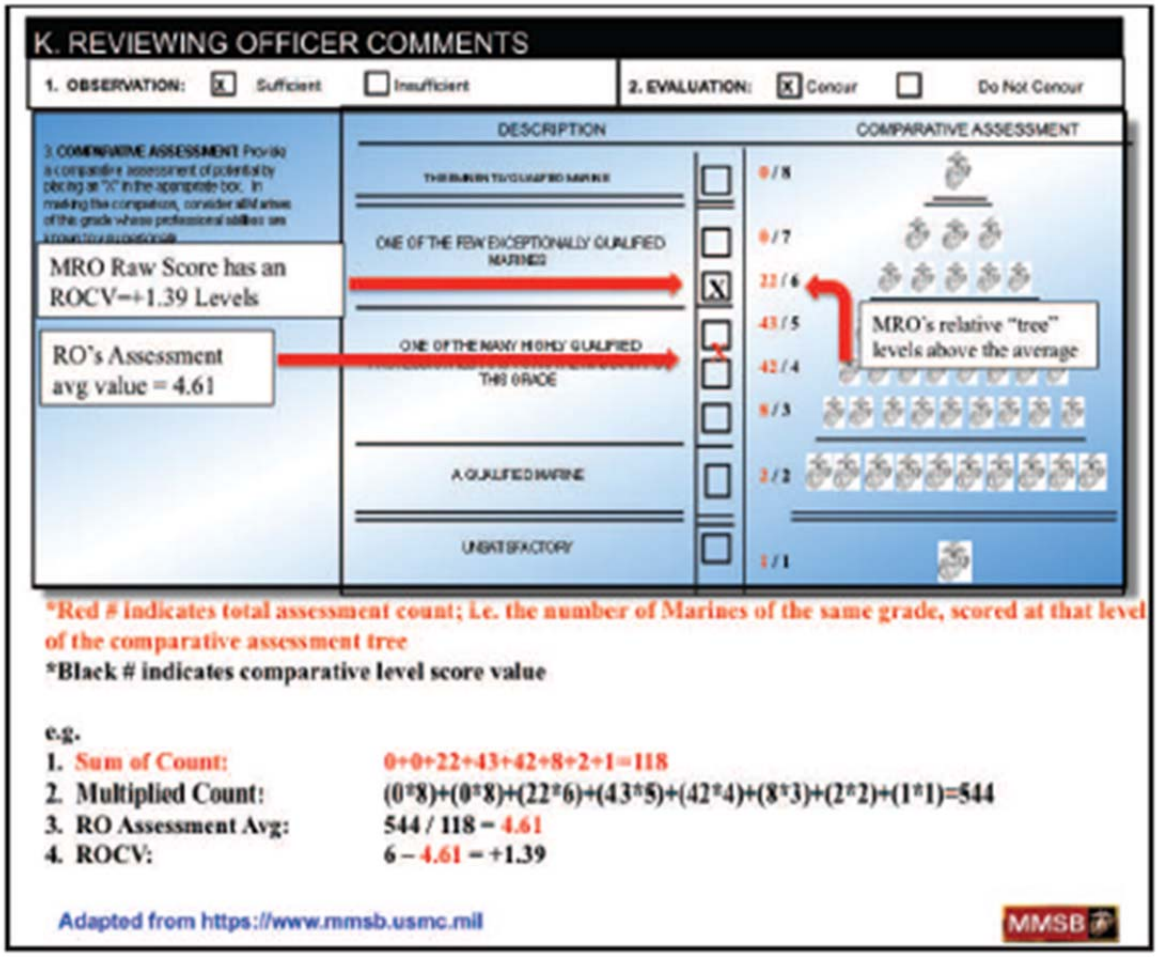

Figure 19. ROCV Example (after MMSB)

Figure 18. ROCV Example (from Reynolds, 2011)

There is a typo on line #2. The second 8 from the left should actually be a 7 for the 7th spot in the "tree level." The correct equation should read: (0*8)+(0*7)+(22*6)+(43*5)+(42*4)+(8*3)+(2*2)+(1*1)=544.

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APPENDIX L. SUMMARY STATISTICS OF SELECTED BY VARIABLE FY10 ROUND 1 THROUGH FY13 ROUND 2

Table 36. Summary Statistics of Selected by Variable FY10 Round 1 through FY13 Round 2

Summary Statistics of Selected by Variable FY10 Round 1 through FY13 Round 2					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Demographics					
Dependents***	3105	0.749	0.434	0	1
Years_Comm_Serv***	6732	0.702	0.458	0	1
Years_Total_Serv***	6732	0.702	0.458	0	1
Prior_Enlisted***	943	0.802	0.399	0	1
Female*	510	0.739	0.439	0	1
White***	5487	0.710	0.454	0	1
Black**	259	0.637	0.482	0	1
Hispanic**	435	0.655	0.476	0	1
Other_Race	551	0.681	0.467	0	1
Married***	3341	0.749	0.434	0	1
Greater_College	183	0.743	0.438	0	1
College	6332	0.703	0.457	0	1
Less_College***	217	0.622	0.486	0	1
Commissioning					
ENLPGM***	792	0.819	0.385	0	1
NROTC	1065	0.717	0.450	0	1
OCC*	2099	0.689	0.463	0	1
PLC***	2028	0.675	0.468	0	1
USNA	1168	0.701	0.458	0	1
Military Occupational Specialty					
Combat_Arms_MOS***	1856	0.655	0.475	0	1
MOS_0302***	1170	0.638	0.481	0	1
MOS_0802*	538	0.669	0.471	0	1
MOS_1802	64	0.656	0.479	0	1
MOS_1803**	84	0.810	0.395	0	1
CSS_MOS***	3176	0.652	0.476	0	1
MOS_0180*	208	0.649	0.478	0	1
MOS_0202**	15	0.400	0.507	0	1
MOS_0203	251	0.705	0.457	0	1
MOS_0204	65	0.754	0.434	0	1

MOS_0206	115	0.704	0.458	0	1
MOS_0207	152	0.750	0.434	0	1
MOS_0402***	865	0.647	0.478	0	1
MOS_0602***	544	0.653	0.477	0	1
MOS_1302*	304	0.655	0.476	0	1
MOS_3002***	314	0.589	0.493	0	1
MOS_3404***	113	0.584	0.495	0	1
MOS_4302*	81	0.617	0.489	0	1
MOS_5803*	149	0.638	0.482	0	1
Air_Grd_MOS***	596	0.641	0.480	0	1
MOS_6002	125	0.640	0.482	0	1
MOS_6602	93	0.720	0.451	0	1
MOS_7204	51	0.686	0.469	0	1
MOS_7208***	174	0.546	0.499	0	1
MOS_7210	77	0.688	0.466	0	1
MOS_7220	76	0.684	0.468	0	1
Law_MOS***	136	0.882	0.323	0	1
MOS_4402***	136	0.882	0.323	0	1
Air_MOS***	968	0.964	0.187	0	1
MOS_7507	3	0.333	0.577	0	1
MOS_7509***	77	0.948	0.223	0	1
MOS_7521	3	1.000	0.000	1	1
MOS_7523***	94	0.989	0.103	0	1
MOS_7525***	37	1.000	0.000	1	1
MOS_7532***	76	1.000	0.000	1	1
MOS_7543**	11	1.000	0.000	1	1
MOS_7556***	42	0.952	0.216	0	1
MOS_7557***	30	1.000	0.000	1	1
MOS_7558	1	1.000	0.000	1	1
MOS_7560*	7	1.000	0.000	1	1
MOS_7561*	7	1.000	0.000	1	1
MOS_7562***	88	0.966	0.183	0	1
MOS_7563***	108	0.981	0.135	0	1
MOS_7564	4	1.000	0.000	1	1
MOS_7565***	155	0.955	0.208	0	1
MOS_7566***	165	0.958	0.202	0	1
MOS_7567	2	1.000	0.000	1	1
MOS_7568	22	0.682	0.477	0	1
MOS_7588***	33	1.000	0.000	1	1
MOS_7599	3	1.000	0.000	1	1

Performance					
GCT_Total***	6732	0.702	0.458	0	1
PFT***	6732	0.702	0.458	0	1
CFT***	6732	0.702	0.458	0	1
Rifle_Exp**	4767	0.709	0.454	0	1
Rifle_Sharp***	1573	0.670	0.470	0	1
Rifle_Marks**	402	0.754	0.431	0	1
Rifle_Unq***	32	0.563	0.504	0	1
Pistol_Exp***	2382	0.724	0.447	0	1
Pistol_Sharp	2962	0.711	0.453	0	1
Pistol_Marks***	1397	0.646	0.478	0	1
Pistol_Unq	15	0.733	0.458	0	1
Water_Unq	28	0.714	0.460	0	1
Water_Qualified	6622	0.702	0.457	0	1
Water_Greater	126	0.683	0.467	0	1
Adverse_Rpt***	214	0.112	0.316	0	1
RV_Pro_Avg***	6732	0.702	0.458	0	1
RV_Pro_Upper***	2078	0.905	0.293	0	1
RV_Pro_Middle	3378	0.694	0.461	0	1
RV_Pro_Lower***	1207	0.370	0.483	0	1
RV_Cum_Avg***	6732	0.702	0.458	0	1
RV_Cum_Upper***	1150	0.942	0.234	0	1
RV_Cum_Middle***	4007	0.759	0.428	0	1
RV_Cum_Lower***	1562	0.379	0.485	0	1
ROPV_Avg***	6725	0.702	0.458	0	1
ROCV_Avg***	6723	0.701	0.458	0	1
Personal_Awards***	3867	0.770	0.421	0	1
Other_Awards***	6730	0.702	0.458	0	1
Foreign_Language***	579	0.667	0.472	0	1
Experience					
Billet_Cmdr***	3440	0.663	0.473	0	1
Billet_XO	1358	0.718	0.450	0	1
Cmbt_Deployment**	3792	0.691	0.462	0	1
Cmbt_Deployment2	1353	0.717	0.451	0	1
Cmbt_Deployment3_Plus***	224	0.813	0.391	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

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APPENDIX M. SUMMARY STATISTICS OF SELECTED BY VARIABLE FY12 ROUND 1 THROUGH FY13 ROUND 2

Table 37. Summary Statistics of Selected by Variable FY12 Round 1 through FY13 Round 2

Summary Statistics of Selected by Variable FY12 Round 1 through FY13 Round 2					
Variables	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Demographics					
Dependents***	1787	0.701	0.458	0	1
Years_Comm_Serv***	3850	0.641	0.480	0	1
Years_Total_Serv***	3850	0.641	0.480	0	1
Prior_Enlisted***	533	0.769	0.422	0	1
Female	276	0.670	0.471	0	1
White**	3111	0.650	0.477	0	1
Black**	143	0.545	0.500	0	1
Hispanic*	241	0.593	0.492	0	1
Other_Race	355	0.637	0.482	0	1
Married***	1914	0.699	0.459	0	1
Greater_College	129	0.705	0.458	0	1
College	3543	0.640	0.480	0	1
Less_College	178	0.607	0.490	0	1
Commissioning					
ENLPGM***	438	0.783	0.413	0	1
NROTC	546	0.643	0.480	0	1
OCC	1268	0.645	0.479	0	1
PLC**	1174	0.614	0.487	0	1
USNA***	592	0.586	0.493	0	1
Military Occupational Specialty					
Combat_Arms_MOS***	1036	0.577	0.494	0	1
MOS_0302***	604	0.553	0.498	0	1
MOS_0802**	333	0.592	0.492	0	1
MOS_1802	48	0.583	0.498	0	1
MOS_1803*	51	0.765	0.428	0	1
CSS_MOS***	1752	0.576	0.494	0	1
MOS_0180	120	0.608	0.490	0	1
MOS_0202***	10	0.100	0.316	0	1
MOS_0203	144	0.632	0.484	0	1
MOS_0204	32	0.688	0.471	0	1

MOS_0206	64	0.594	0.495	0	1
MOS_0207	74	0.635	0.485	0	1
MOS_0402***	453	0.552	0.498	0	1
MOS_0602*	276	0.594	0.492	0	1
MOS_1302**	174	0.563	0.497	0	
MOS_3002*	185	0.584	0.494	0	1
MOS_3404***	81	0.481	0.503	0	1
MOS_4302	52	0.538	0.503	0	1
MOS_5803	87	0.586	0.495	0	1
Air_Grd_MOS***	371	0.577	0.495	0	1
MOS_6002*	88	0.557	0.500	0	1
MOS_6602	58	0.672	0.473	0	1
MOS_7204	26	0.692	0.471	0	1
MOS_7208***	108	0.481	0.502	0	1
MOS_7210	45	0.644	0.484	0	1
MOS_7220	46	0.587	0.498	0	1
Law_MOS***	110	0.855	0.354	0	1
MOS_4402***	110	0.855	0.354	0	1
Air_MOS***	581	0.950	0.218	0	1
MOS_7507	3	0.333	0.577	0	1
MOS_7509***	43	0.907	0.294	0	1
MOS_7521	3	1.000	0.000	1	1
MOS_7523***	48	0.979	0.144	0	1
MOS_7525**	11	1.000	0.000	1	1
MOS_7532***	58	1.000	0.000	1	1
MOS_7543*	5	1.000	0.000	1	1
MOS_7556***	28	0.929	0.262	0	1
MOS_7557***	16	1.000	0.000	1	1
MOS_7558	0				
MOS_7560	3	1.000	0.000	1	1
MOS_7561	3	1.000	0.000	1	1
MOS_7562***	48	0.979	0.144	0	1
MOS_7563***	64	0.969	0.175	0	1
MOS_7564	0				
MOS_7565***	103	0.932	0.253	0	1
MOS_7566***	102	0.971	0.170	0	1
MOS_7567	1	1.000	0.000	1	1
MOS_7568	19	0.632	0.496	0	1
MOS_7588***	21	1.000	0.000	1	1
MOS_7599	2	1.000	0.000	1	1

Performance					
GCT_Total***	3850	0.641	0.480	0	1
PFT***	3850	0.641	0.480	0	1
CFT***	3850	0.641	0.480	0	1
Rifle_Exp	2828	0.648	0.478	0	1
Rifle_Sharp**	883	0.613	0.487	0	1
Rifle_Marks	152	0.697	0.461	0	1
Rifle_Unq**	17	0.529	0.514	0	1
Pistol_Exp**	1331	0.665	0.472	0	1
Pistol_Sharp	1731	0.644	0.479	0	1
Pistol_Marks***	789	0.594	0.491	0	1
Pistol_Unq	5	0.400	0.548	0	1
Water_Unq	18	0.667	0.485	0	1
Water_Qualified	3794	0.642	0.480	0	1
Water_Greater	62	0.645	0.482	0	1
Adverse_Rpt***	137	0.117	0.322	0	1
RV_Pro_Avg***	3850	0.641	0.480	0	1
RV_Pro_Upper***	1129	0.859	0.348	0	1
RV_Pro_Middle	1964	0.631	0.483	0	1
RV_Pro_Lower***	717	0.329	0.470	0	1
RV_Cum_Avg***	3850	0.641	0.480	0	1
RV_Cum_Upper***	628	0.903	0.296	0	1
RV_Cum_Middle***	2326	0.695	0.461	0	1
RV_Cum_Lower***	887	0.318	0.466	0	1
ROPV_Avg***	3844	0.641	0.480	0	1
ROCV_Avg***	3847	0.641	0.480	0	1
Personal_Awards***	2112	0.712	0.453	0	1
Other_Awards***	3848	0.641	0.480	0	1
Foreign_Language**	325	0.588	0.493	0	1
Experience					
Billet_Cmdr***	1883	0.580	0.494	0	1
Billet_XO	681	0.628	0.484	0	1
Cmbt_Deployment	2178	0.634	0.482	0	1
Cmbt_Deployment2	621	0.623	0.485	0	1
Cmbt_Deployment3_Plus***	129	0.806	0.397	0	1
*** Significant at 1%; ** Significant at 5%; * Significant at 10%					

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APPENDIX N. MODEL RESULTS FY10 ROUND 1 THROUGH FY13 ROUND 2

ALL BOARDS FY10 Round 1 through FY13 Round 2 Results																								
	Combat Arms Competitive Category					Combat Service Support Competitive Category					Aviation-Ground Competitive Category					Aviation Competitive Category					Law Competitive Category			
Models	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**
Dependent Variable = Selected for Career Designation																								
Independent Variables																								
Demographics																								
Dependents	0.0076	0.0021	0.0026	0.0184	0.0204	0.0124	0.0148	0.0187	0.0233	0.0293*	0.0483*	0.0370	0.0348	0.0094	0.0114	0.0017	0.0016	0.0055	0.0000	0.0000	-0.0106	-0.0010	0.0292	0.0401
	(0.0229)	(0.0236)	(0.0237)	(0.0297)	(0.0299)	(0.0127)	(0.0132)	(0.0133)	(0.0171)	(0.0172)	(0.0257)	(0.0270)	(0.0273)	(0.0353)	(0.0354)	(0.0070)	(0.0055)	(0.0057)	(0.0000)	(0.0000)	(0.0469)	(0.0468)	(0.0387)	(0.2021)
Years_Comm_Serv	-0.0743***	-0.0872***	-0.0861***	0.0192	0.0107	-0.0939***	-0.1014***	-0.1018***	0.0070	-0.0030	-0.0675***	-0.0665***	-0.0722***	0.0610	0.0688*	-0.0085	-0.0072	-0.0120**	-0.0000	-0.0000	-0.0128	-0.0281	0.0179	-0.0148
	(0.0218)	(0.0223)	(0.0224)	(0.0270)	(0.0268)	(0.0155)	(0.0165)	(0.0168)	(0.0219)	(0.0222)	(0.0252)	(0.0256)	(0.0258)	(0.0407)	(0.0409)	(0.0053)	(0.0044)	(0.0054)	(0.0000)	(0.0000)	(0.0472)	(0.0465)	(0.0508)	(0.0805)
Years_Total_Serv	0.0030	0.0239***	0.0234***	0.0218*	0.0261**	0.0055	0.0094*	0.0097*	0.0034	0.0067	-0.0016	0.0022	-0.0009	-0.0084	-0.0092	-0.0074**	-0.0057**	-0.0064**	-0.0000	-0.0000	0.0210	0.0165	-0.0141	-0.0046
	(0.0072)	(0.0090)	(0.0090)	(0.0129)	(0.0129)	(0.0048)	(0.0055)	(0.0055)	(0.0080)	(0.0081)	(0.0105)	(0.0114)	(0.0116)	(0.0175)	(0.0175)	(0.0029)	(0.0026)	(0.0027)	(0.0000)	(0.0000)	(0.0363)	(0.0346)	(0.0389)	(0.0347)
Prior_Enlisted	0.1187**	-0.2748**	-0.2663**	-0.1913	-0.1904	0.1426***	0.0324	0.0351	0.0368	0.0410	0.0748	-0.0626	-0.0762	-0.0845	-0.0726	0.0295***	0.0460***	0.0442***	0.0000	0.0000				
	(0.0586)	(0.1082)	(0.1091)	(0.1578)	(0.1586)	(0.0368)	(0.0565)	(0.0566)	(0.0746)	(0.0745)	(0.0897)	(0.1188)	(0.1211)	(0.1545)	(0.1559)	(0.0070)	(0.0096)	(0.0115)	(0.0001)	(0.0001)				
Female						0.1083***	0.0945***	0.1119***	0.0760**	0.0798**	-0.0027	-0.0149	0.0057	0.0340	0.0453	-0.0153	-0.0098	0.0085	0.0000	0.0000	0.0700	0.0621	0.0474	0.0269
						(0.0244)	(0.0257)	(0.0258)	(0.0340)	(0.0339)	(0.0667)	(0.0691)	(0.0699)	(0.0987)	(0.0976)	(0.0278)	(0.0215)	(0.0114)	(0.0000)	(0.0000)	(0.0900)	(0.0929)	(0.0412)	(0.1518)
Black	-0.0677	-0.0909	-0.0893	0.0419	0.0276	-0.1332***	-0.1464***	-0.1284***	-0.0305	-0.0302	0.0143	0.0071	0.0135	0.2661***	0.2574***									
	(0.0702)	(0.0731)	(0.0731)	(0.0763)	(0.0782)	(0.0433)	(0.0444)	(0.0446)	(0.0555)	(0.0555)	(0.1006)	(0.1045)	(0.1051)	(0.0580)	(0.0580)									
Hispanic	0.0363	0.0670	0.0629	0.0774	0.0741	-0.1333***	-0.1434***	-0.1290***	-0.0962**	-0.1032**	-0.0569	-0.0712	-0.0768	0.0448	0.0600	-0.0151	-0.0109	-0.0300	-0.0000	-0.0000				
	(0.0522)	(0.0518)	(0.0523)	(0.0599)	(0.0582)	(0.0348)	(0.0354)	(0.0357)	(0.0466)	(0.0473)	(0.0772)	(0.0795)	(0.0800)	(0.0988)	(0.0982)	(0.0305)	(0.0244)	(0.0381)	(0.0001)	(0.0001)				
Other_Race	-0.0612	-0.0707	-0.0714	0.0283	0.0382	-0.0337	-0.0301	-0.0306	-0.0207	-0.0164	0.0892	0.0919	0.1026	0.2174***	0.2319***	0.0093	0.0059	0.0054	0.0000	0.0000	0.0110	0.0306	-0.1877	-0.1030
	(0.0476)	(0.0485)	(0.0486)	(0.0549)	(0.0534)	(0.0304)	(0.0306)	(0.0308)	(0.0378)	(0.0379)	(0.0641)	(0.0644)	(0.0642)	(0.0580)	(0.0535)	(0.0160)	(0.0131)	(0.0128)	(0.0000)	(0.0000)	(0.1370)	(0.1214)	(0.3392)	(0.4620)
Married	0.0616*	0.0631*	0.0608	0.0266	0.0138	0.0261	0.0197	0.0179	-0.0112	-0.0231	-0.0007	0.0119	0.0010	-0.0561	-0.0787	0.0376*	0.0292*	0.0179	0.0000	-0.0000	0.1005	0.0833	0.0535	0.0200
	(0.0370)	(0.0375)	(0.0376)	(0.0484)	(0.0487)	(0.0244)	(0.0249)	(0.0250)	(0.0316)	(0.0318)	(0.0542)	(0.0563)	(0.0567)	(0.0704)	(0.0705)	(0.0198)	(0.0160)	(0.0145)	(0.0000)	(0.0000)	(0.1032)	(0.1015)	(0.0890)	(0.1155)
Greater_College	-0.1748*	-0.1941**	-0.1984**	-0.1426	-0.1190	0.0142	0.0113	0.0243	-0.1075	-0.1181	0.0933	0.1384	0.1171	-0.1579	-0.1427	-0.0114	-0.0085	-0.0007	-0.0012	-0.0002	-0.0025	0.0057	0.0704	0.0336
	(0.0957)	(0.0990)	(0.0996)	(0.1430)	(0.1398)	(0.0611)	(0.0626)	(0.0618)	(0.0934)	(0.0938)	(0.1406)	(0.1465)	(0.1552)	(0.2622)	(0.2673)	(0.0399)	(0.0323)	(0.0249)	(0.0042)	(0.0016)	(0.0663)	(0.0656)	(0.0645)	(0.1678)
Less_College	0.0119	0.0191	0.0207	0.0384	0.0408	-0.0973**	-0.1064**	-0.1043**	-0.1908***	-0.1843***	-0.1257	-0.1605	-0.1840*	-0.1093	-0.0919									
	(0.0616)	(0.0626)	(0.0627)	(0.0745)	(0.0726)	(0.0489)	(0.0507)	(0.0507)	(0.0633)	(0.0643)	(0.0991)	(0.1037)	(0.1047)	(0.1384)	(0.1385)									
Commissioning																								
ENLPGM		0.2643***	0.2564***	0.1975***	0.1964***		0.1000*	0.1072**	0.1044	0.1089*		0.1372	0.1743*	0.2413**	0.2625**		-0.9867***	-0.9900***	-0.3245*	-0.0369				
		(0.0516)	(0.0541)	(0.0678)	(0.0639)		(0.0518)	(0.0515)	(0.0660)	(0.0656)		(0.1065)	(0.1032)	(0.1105)	(0.1053)		(0.0026)	(0.0027)	(0.1767)	(0.2990)				
NROTC		0.0179	0.0123	0.1157***	0.1106***		0.0287	0.0252	0.0779**	0.0797**		-0.0206	-0.0281	0.1569*	0.1775**		0.0185**	0.0148*	0.0000	0.0000				
		(0.0387)	(0.0390)	(0.0414)	(0.0414)		(0.0315)	(0.0319)	(0.0357)	(0.0356)		(0.0863)	(0.0883)	(0.0827)	(0.0775)		(0.0075)	(0.0081)	(0.0000)	(0.0000)				
OCC		-0.0460	-0.0542	0.1049**	0.0952**		-0.0050	-0.0036	0.1302***	0.1255***		0.0542	0.0638	0.1863**	0.2001**		0.0047	-0.0044	0.0000	0.0000				
		(0.0357)	(0.0360)	(0.0415)	(0.0418)		(0.0279)	(0.0280)	(0.0325)	(0.0326)		(0.0715)	(0.0721)	(0.0837)	(0.0829)		(0.0106)	(0.0138)	(0.0000)	(0.0000)				
PLC		-0.1126***	-0.1182***	0.0706	0.0647		-0.0428	-0.0403	0.0922***	0.0887**		-0.0631	-0.0400	0.0935	0.1099		0.0056	0.0116	0.0000	0.0000		0.1137	0.0716	0.1194
		(0.0386)	(0.0388)	(0.0468)	(0.0466)		(0.0302)	(0.0304)	(0.0353)	(0.0355)		(0.0767)	(0.0770)	(0.0927)	(0.0918)		(0.0109)	(0.0107)	(0.0000)	(0.0000)		(0.0839)	(0.0755)	(0.4964)
Military Occupational Specialty																								
MOS_0302			-0.0255	-0.0590*	-0.0353																			
			(0.0254)	(0.0322)	(0.0459)																			
MOS_1802			-0.0282	-0.0930	-0.0689																			
			(0.0689)	(0.0932)	(0.0968)																			
MOS_1803			0.1348***	0.0842	0.1371**																			
			(0.0503)	(0.0639)	(0.0563)																			
MOS_0202								-0.0470	-0.2973	-0.3185*														
								(0.1414)	(0.1878)	(0.1842)														
MOS_0203								0.1163***	0.0583	0.0255														
								(0.0405)	(0.0553)	(0.0592)														
MOS_0204								0.1209**	0.0221	-0.0156														
								(0.0592)	(0.0796)	(0.0847)														
MOS_0206								0.0757	0.1156**	0.0561														
								(0.0524)	(0.0588)	(0.0706)														
MOS_0207								0.1218***	0.0443	0.0250														
								(0.0450)	(0.0655)	(0.0681)														
MOS_0402								0.0340	-0.0275	-0.0730														
								(0.0377)	(0.0513)	(0.0546)														
MOS_0602								0.0454	0.0183	-0.0148														
								(0.0392)	(0.0519)	(0.0561)														

	Combat Arms Competitive Category					Combat Service Support Competitive Category					Aviation-Ground Competitive Category					Aviation Competitive Category					Law Competitive Category			
Models	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**
Dependent Variable = Selected for Career Designation																								
Independent Variables																								
MOS_1302								0.0561	-0.0072	-0.0664														
								(0.0422)	(0.0585)	(0.0688)														
MOS_3002								-0.0111	-0.0570	-0.0572														
								(0.0447)	(0.0617)	(0.0620)														
MOS_3404								-0.1060*	-0.1640**	-0.1666**														
								(0.0615)	(0.0780)	(0.0784)														
MOS_4302								-0.0184	-0.0489	-0.0504														
								(0.0650)	(0.0848)	(0.0855)														
MOS_5803								0.0176	-0.0385	-0.0792														
								(0.0518)	(0.0692)	(0.0765)														
MOS_6602													0.1142*	0.1456**	0.1584**									
													(0.0640)	(0.0726)	(0.0700)									
MOS_7204													0.0909	0.0866	-0.0947									
													(0.0774)	(0.0911)	(0.1450)									
MOS_7208													-0.0643	0.0101	-0.0458									
													(0.0603)	(0.0842)	(0.0919)									
MOS_7210													0.0373	0.1508**	0.1502**									
													(0.0717)	(0.0752)	(0.0750)									
MOS_7220													0.0803	0.1184	0.1016									
													(0.0691)	(0.0782)	(0.0823)									
MOS_7507																		-0.6452**	-0.0001	-0.0000				
																		(0.3267)	(0.0010)	(0.0002)				
MOS_7509																		-0.0333	-0.0001	-0.0000				
																		(0.0455)	(0.0003)	(0.0002)				
MOS_7525																								
MOS_7532																								
MOS_7543																								
MOS_7556																		-0.1141	-0.0003	-0.0002				
																		(0.1073)	(0.0010)	(0.0017)				
MOS_7557																								
MOS_7558																								
MOS_7560																								
MOS_7561																								
MOS_7562																		-0.0467	0.0000	0.0000				
																		(0.0545)	(0.0000)	(0.0000)				
MOS_7563																		-0.0490	-0.0000	-0.0000				
																		(0.0575)	(0.0001)	(0.0001)				
MOS_7564																								
MOS_7565																		-0.0988	-0.0003	-0.0001				
																		(0.0696)	(0.0009)	(0.0012)				
MOS_7566																		-0.0719	-0.0000	-0.0000				
																		(0.0564)	(0.0001)	(0.0001)				
MOS_7567																								
MOS_7568																		-0.5983***	-0.0283	-0.0096				
																		(0.1925)	(0.0611)	(0.0643)				
MOS_7588																								
MOS_7599																								
Performance																								
GCT_TOTAL				0.0038**	0.0036**				0.0008	0.0008				0.0001	0.0003				-0.0000	-0.0000			-0.0001	-0.0010
				(0.0016)	(0.0016)				(0.0012)	(0.0012)				(0.0028)	(0.0028)				(0.0000)	(0.0000)			(0.0026)	(0.0053)

	Combat Arms Competitive Category					Combat Service Support Competitive Category					Aviation-Ground Competitive Category					Aviation Competitive Category					Law Competitive Category			
Models	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**
Dependent Variable = Selected for Career Designation																								
Independent Variables																								
PFT				0.0025**	0.0026**				0.0028***	0.0026***				0.0051***	0.0053***				0.0000	0.0000			0.0015	0.0005
				(0.0010)	(0.0010)				(0.0006)	(0.0006)				(0.0017)	(0.0017)				(0.0000)	(0.0000)			(0.0018)	(0.0030)
CFT				-0.0037*	-0.0034*				-0.0005	-0.0003				0.0012	0.0002				0.0000	0.0000			0.0003	-0.0001
				(0.0020)	(0.0020)				(0.0012)	(0.0012)				(0.0032)	(0.0032)				(0.0000)	(0.0000)			(0.0035)	(0.0023)
Rifle_Sharp				-0.0226	-0.0314				0.0596**	0.0550**				-0.1780**	-0.1768**				-0.0000	-0.0000			0.0363	0.0220
				(0.0367)	(0.0370)				(0.0256)	(0.0259)				(0.0738)	(0.0759)				(0.0001)	(0.0001)			(0.0480)	(0.1180)
Rifle_Marks				0.1207**	0.1149**				0.1205***	0.1150***				0.2684***	0.2735***				0.0000	0.0000			-0.3234	-0.3986
				(0.0535)	(0.0526)				(0.0419)	(0.0424)				(0.0578)	(0.0491)				(0.0000)	(0.0000)			(0.5538)	(1.0252)
Rifle_Unq				-0.1838	-0.1547				-0.0362	-0.0280									0.0000	0.0000				
				(0.3211)	(0.3106)				(0.3350)	(0.3381)									(0.0001)	(0.0000)				
Pistol_Sharp				0.0167	0.0177				-0.0539**	-0.0624**				0.0508	0.0787				-0.0000	-0.0000			-0.0458	-0.0443
				(0.0330)	(0.0329)				(0.0263)	(0.0265)				(0.0588)	(0.0593)				(0.0000)	(0.0000)			(0.0631)	(0.2158)
Pistol_Marks				-0.0964**	-0.1004**				-0.0726**	-0.0677**				0.0778	0.0872				0.0000	0.0000			0.0706	0.0797
				(0.0483)	(0.0487)				(0.0328)	(0.0330)				(0.0707)	(0.0700)				(0.0000)	(0.0000)			-0.0576	(0.3662)
Pistol Unq																								
Water_Unq									-0.0575	-0.0623														
									(0.2856)	(0.2874)														
Water_Greater				0.2330***	0.2292***				-0.0730	-0.0494				-0.2459	-0.1515				-0.0157	-0.0160				
				(0.0315)	(0.0295)				(0.1032)	(0.1027)				(0.2696)	(0.2679)				(0.0511)	(0.0978)				
Adverse_Rpt				-0.6041***	-0.6227***				-0.6009***	-0.6015***				-0.7106***	-0.7240***				-0.0683	-0.0636			-0.0598	-0.1074
				(0.0804)	(0.0783)				(0.0620)	(0.0618)				(0.0398)	(0.0362)				(0.0989)	(0.2715)			(0.5646)	(20.0291)
RV_Pro_Avg				0.0152*	0.0167*				0.0289***	0.0289***				0.0133	0.0127				0.0000	0.0000			-0.0070	-0.0015
				(0.0092)	(0.0092)				(0.0065)	(0.0066)				(0.0157)	(0.0158)				(0.0000)	(0.0000)			(0.0152)	(0.0136)
RV_Pro_Middle				-0.0333	-0.0343				0.0581	0.0631				-0.0690	-0.0674				-0.0668	-0.0205			-0.0256	0.0888
				(0.0600)	(0.0597)				(0.0445)	(0.0447)				(0.1080)	(0.1085)				(0.0636)	(0.1975)			(0.0925)	(0.4039)
RV_Pro_Lower				-0.2032*	-0.2009*				0.0880	0.0883				-0.0555	-0.0630				-0.6694***	-0.3684			-0.0808	0.0387
				(0.1151)	(0.1156)				(0.0688)	(0.0689)				(0.1950)	(0.1963)				(0.2500)	(2.8431)			(0.3664)	(0.2097)
RV_Cum_Avg				0.0436***	0.0423***				0.0371***	0.0382***				0.0112	0.0114				-0.0000	-0.0000			0.0018	0.0055
				(0.0111)	(0.0110)				(0.0077)	(0.0077)				(0.0182)	(0.0185)				(0.0000)	(0.0000)			(0.0178)	(0.0302)
RV_Cum_Middle				0.0816	0.0769				0.1415***	0.1456***				0.0341	0.0226				0.0016	0.0005			-0.0685	-0.0432
				(0.0912)	(0.0925)				(0.0511)	(0.0513)				(0.1257)	(0.1257)				(0.0037)	(0.0038)			(0.0989)	(0.2281)
RV_Cum_Lower				0.1602*	0.1514				0.0822	0.0904				-0.1691	-0.1585				0.0001	0.0000			-0.5033	-0.5038
				(0.0944)	(0.0956)				(0.0704)	(0.0698)				(0.2110)	(0.2136)				(0.0002)	(0.0002)			(0.8586)	(1.4223)
ROPV_Avg				0.0644	0.0625				-0.0141	-0.0124				0.0177	0.0159				0.0000	0.0000			0.0399	0.0409
				(0.0465)	(0.0463)				(0.0169)	(0.0170)				(0.0407)	(0.0409)				(0.0000)	(0.0000)			(0.0456)	(0.2067)
ROCV_Avg				0.4417***	0.4479***				0.4059***	0.4096***				0.5282***	0.5464***				0.0000	0.0000			-0.0024	-0.0026
				(0.0621)	(0.0622)				(0.0363)	(0.0366)				(0.0926)	(0.0948)				(0.0000)	(0.0000)			(0.1065)	(0.0860)
Personal_Awards				0.0669***	0.0523***				0.0582***	0.0523***				0.0954**	0.1055***				0.0000	0.0000			-0.0076	0.0288
				(0.0166)	(0.0169)				(0.0142)	(0.0144)				(0.0390)	(0.0394)				(0.0000)	(0.0000)			(0.0695)	(0.1492)
Other_Awards				-0.0018	-0.0082				-0.0010	-0.0065				-0.0004	-0.0051				-0.0000	-0.0000			0.0288	0.0343
				(0.0064)	(0.0068)				(0.0040)	(0.0041)				(0.0075)	(0.0079)				(0.0000)	(0.0000)			(0.0240)	(0.1728)
Foreign_Language				-0.0146	-0.0133				0.0019	0.0028				-0.0670***	-0.0689***				-0.0000	0.0000				
				(0.0168)	(0.0167)				(0.0062)	(0.0062)				(0.0222)	(0.0229)				(0.0000)	(0.0000)				
Experience																								
Billet_Cmdr					-0.0107					0.0061					0.0253					-0.0000				
					(0.0111)					(0.0080)					(0.0274)					(0.0000)				
Billet_XO					0.0331*					0.0362*					0.1345**					-0.0409				
					(0.0173)					(0.0186)					(0.0603)					(0.2832)				
Cmbt_Deployment					0.1777***					0.0602**					-0.0070					0.0000				-0.0856
					(0.0505)					(0.0304)					(0.0637)					(0.0000)				(0.3841)
Cmbt_Deployment2					0.1530***					0.1596***					0.0643					0.0000				
					(0.0460)					(0.0322)					(0.0826)					(0.0000)				
Cmbt_Deployment3_Plus					0.1891***					0.1374**					0.1374					0.0000				
					(0.0494)					(0.0641)					(0.1146)					(0.0000)				
Observations	1,827	1,802	1,802	1,580	1,580	3,132	3,078	3,078	2,724	2,724	592	583	583	512	512	929	914	718	653	653	110	110	84	78
Standard errors in parentheses																								
*** Significant at 1%; ** Significant at 5%; *Significant at 10%																								

Figure 19. Model Results for FY10 Round 1 through FY13 Round 2

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APPENDIX O. MODEL RESULTS FY12 ROUND 1 THROUGH FY13 ROUND 2 SAMPLE

FY12 Round 1 through FY13 Round 2 Results

	Combat Arms Competitive Category					Combat Service Support Competitive Category					Aviation-Ground Competitive Category					Aviation Competitive Category					Law Competitive Category			
Models	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**
Dependent Variable = Selected for Career Designation																								
Independent Variables																								
Demographics																								
Dependents	-0.0142	-0.0322	-0.0318	-0.0609	-0.0546	0.0293	0.0241	0.0274	0.0316	0.0387	0.0414	0.0287	0.0295	0.0187	0.0210	0.0016	0.0011	0.0089	0.0000	0.0000	-0.0136	0.0000	0.0029	0.0000
	(0.0308)	(0.0321)	(0.0322)	(0.0441)	(0.0455)	(0.0185)	(0.0189)	(0.0191)	(0.0248)	(0.0250)	(0.0326)	(0.0345)	(0.0350)	(0.0484)	(0.0490)	(0.0106)	(0.0086)	(0.0104)	(0.0000)	(0.0000)	(0.0555)	(0.0558)	(0.0104)	(0.0000)
Years Comm Serv	-0.0433	-0.0447	-0.0415	0.0479	0.0495	-0.0717***	-0.0685***	-0.0699***	0.0729**	0.0665**	-0.0834*	-0.0689	-0.0769	0.0688	0.0832	-0.0188*	-0.0147*	-0.0240**	-0.0000	-0.0000	-0.0268	-0.0402	0.0112	0.0000
	(0.0290)	(0.0301)	(0.0303)	(0.0393)	(0.0404)	(0.0223)	(0.0230)	(0.0236)	(0.0309)	(0.0314)	(0.0446)	(0.0463)	(0.0474)	(0.0647)	(0.0657)	(0.0099)	(0.0084)	(0.0113)	(0.0000)	(0.0000)	(0.0614)	(0.0583)	(0.0300)	(0.0000)
Years Total Serv	0.0068	0.0258**	0.0254**	0.0349*	0.0461**	0.0021	0.0068	0.0069	-0.0055	-0.0027	-0.0048	0.0010	-0.0040	-0.0206	-0.0219	-0.0113***	-0.0095**	0.0124***	-0.0000	-0.0000	0.0309	0.0244	-0.0086	-0.0000
	(0.0098)	(0.0123)	(0.0124)	(0.0191)	(0.0197)	(0.0069)	(0.0078)	(0.0079)	(0.0115)	(0.0117)	(0.0141)	(0.0155)	(0.0162)	(0.0244)	(0.0247)	(0.0044)	(0.0042)	(0.0046)	(0.0000)	(0.0000)	(0.0464)	(0.0434)	(0.0227)	(0.0001)
Prior Enlisted	0.1483*	-0.2252*	-0.2162	-0.1648	-0.1531	0.2256***	0.1278*	0.1375*	0.1340	0.1345	0.0609	-0.0946	-0.1101	-0.2583	-0.2441	0.0389***	0.0617***	0.0586***	0.0000	0.0000				
	(0.0811)	(0.1328)	(0.1343)	(0.2046)	(0.2081)	(0.0505)	(0.0756)	(0.0758)	(0.1002)	(0.1020)	(0.1262)	(0.1646)	(0.1699)	(0.2334)	(0.2375)	(0.0103)	(0.0148)	(0.0181)	(0.0000)	(0.0000)				
Female						0.1064***	0.1043***	0.1158***	0.0566	0.0593	0.0404	0.0313	0.0733	0.1556	0.1644	-0.0360	-0.0213	0.0128	0.0000	0.0000	0.0960	0.0877	0.0096	0.0000
						(0.0368)	(0.0380)	(0.0388)	(0.0534)	(0.0534)	(0.0828)	(0.0849)	(0.0854)	(0.1129)	(0.1123)	(0.0488)	(0.0379)	(0.0161)	(0.0000)	(0.0000)	(0.1034)	(0.1071)	(0.0259)	(0.0001)
Black	-0.0297	-0.0405	-0.0406	0.0586	0.0267	-0.2083***	-0.2048***	-0.2002***	-0.0751	-0.0845	-0.0174	-0.0003	-0.0147	0.2189	0.2192									
	(0.0887)	(0.0917)	(0.0920)	(0.1108)	(0.1153)	(0.0590)	(0.0597)	(0.0606)	(0.0826)	(0.0831)	(0.1296)	(0.1303)	(0.1343)	(0.1590)	(0.1545)									
Hispanic	0.0508	0.0913	0.0860	0.1100	0.1074	-0.1648***	-0.1762***	-0.1642***	-0.1141*	-0.1100*	-0.0763	-0.0812	-0.0892	0.1977	0.1816	-0.0291	-0.0168	-0.0520	-0.0003	-0.0000				
	(0.0749)	(0.0751)	(0.0761)	(0.0939)	(0.0932)	(0.0464)	(0.0468)	(0.0477)	(0.0628)	(0.0632)	(0.1080)	(0.1094)	(0.1098)	(0.1279)	(0.1372)	(0.0459)	(0.0350)	(0.0603)	(0.0016)	(0.0001)				
Other Race	-0.0341	-0.0346	-0.0364	-0.0123	-0.0128	-0.0201	-0.0118	-0.0129	0.0013	0.0046	0.0194	0.0239	0.0255	0.1951*	0.2111**	0.0248	0.0174	0.0170	0.0000	0.0000	0.0438	0.0638	-0.0479	-0.0000
	(0.0600)	(0.0615)	(0.0618)	(0.0836)	(0.0850)	(0.0397)	(0.0401)	(0.0404)	(0.0503)	(0.0505)	(0.0875)	(0.0873)	(0.0892)	(0.1030)	(0.1008)	(0.0152)	(0.0135)	(0.0120)	(0.0000)	(0.0000)	(0.1388)	(0.1239)	(0.1659)	(0.0001)
Married	0.0954*	0.1090**	0.1054**	0.1450**	0.1248*	0.0004	0.0052	0.0007	-0.0342	-0.0433	-0.0017	0.0170	-0.0002	-0.0322	-0.0636	0.0525*	0.0435*	0.0284	-0.0000	-0.0000	0.1241	0.1015	0.0225	0.0001
	(0.0499)	(0.0510)	(0.0512)	(0.0671)	(0.0690)	(0.0349)	(0.0354)	(0.0357)	(0.0450)	(0.0452)	(0.0701)	(0.0731)	(0.0741)	(0.0997)	(0.1013)	(0.0302)	(0.0255)	(0.0253)	(0.0000)	(0.0000)	(0.1202)	(0.1188)	(0.0510)	(0.0009)
Greater College	-0.3452***	-0.3761***	-0.3860***	-0.3224*	-0.3485**	0.0511	0.0483	0.0682	-0.1197	-0.1242	-0.0171	0.0463	0.0224	-0.2096	-0.1826	-0.0177	-0.0118	-0.0034	-0.0001	-0.0000	0.0417	0.0523	0.0536	0.0007
	(0.1043)	(0.1051)	(0.1043)	(0.1873)	(0.1771)	(0.0851)	(0.0860)	(0.0848)	(0.1217)	(0.1229)	(0.2039)	(0.2209)	(0.2272)	(0.3365)	(0.3439)	(0.0519)	(0.0422)	(0.0355)	(0.0004)	(0.0000)	(0.0824)	(0.0828)	(0.0911)	(0.0045)
Less College	0.0902	0.0680	0.0716	0.0932	0.1004	-0.0338	-0.0502	-0.0546	-0.1705**	-0.1657**	-0.0611	-0.1046	-0.1243	-0.1432	-0.1112									
	(0.0676)	(0.0719)	(0.0719)	(0.0949)	(0.0935)	(0.0553)	(0.0570)	(0.0574)	(0.0720)	(0.0729)	(0.1078)	(0.1136)	(0.1152)	(0.1608)	(0.1626)									
Commissioning																								
ENLPGM		0.3306***	0.3226***	0.2583**	0.2232		0.1311*	0.1332*	0.1477	0.1492		0.1865	0.2345*	0.4015***	0.4158***		-0.9720***	0.9859***	-0.0112	0.0000				
		(0.0738)	(0.0770)	(0.1250)	(0.1390)		(0.0758)	(0.0764)	(0.0974)	(0.0983)		(0.1458)	(0.1399)	(0.1297)	(0.1254)		(0.0004)	(0.0035)	(0.0278)	(0.0000)				
NROTC		0.0573	0.0527	0.1395**	0.1201*		0.0672	0.0721	0.1273**	0.1248**		0.0497	0.0178	0.1412	0.1593		0.0232**	0.0132	0.0000	0.0000				
		(0.0539)	(0.0543)	(0.0664)	(0.0686)		(0.0452)	(0.0457)	(0.0516)	(0.0519)		(0.1129)	(0.1198)	(0.1331)	(0.1306)		(0.0114)	(0.0176)	(0.0000)	(0.0000)				
OCC		0.0339	0.0272	0.1720***	0.1624**		0.0601	0.0647	0.2162***	0.2056***		0.1146	0.1167	0.3452***	0.3573***		0.0148	-0.0100	0.0000	0.0000				
		(0.0501)	(0.0503)	(0.0627)	(0.0639)		(0.0393)	(0.0396)	(0.0467)	(0.0474)		(0.0917)	(0.0936)	(0.1069)	(0.1066)		(0.0151)	(0.0244)	(0.0000)	(0.0000)				
PLC		-0.0654	-0.0708	0.1175*	0.0987		0.0003	0.0069	0.1700***	0.1645***		-0.0160	0.0067	0.2420**	0.2498**		0.0129	0.0174	0.0000	0.0000		0.1263	0.0207	0.0010
		(0.0538)	(0.0540)	(0.0707)	(0.0718)		(0.0429)	(0.0434)	(0.0514)	(0.0522)		(0.0961)	(0.0975)	(0.1147)	(0.1147)		(0.0173)	(0.0184)	(0.0000)	(0.0000)		(0.0948)	(0.0531)	(0.0064)
Military Occupational Specialty																								
MOS 0302			-0.0234	-0.0958**	-0.0743																			
			(0.0351)	(0.0480)	(0.0669)																			
MOS 1802			-0.0363	-0.1478	-0.1259																			
			(0.0829)	(0.1183)	(0.1299)																			
MOS 1803			0.1729**	0.1122	0.2175***																			
			(0.0689)	(0.0961)	(0.0812)																			
MOS 0202								-0.4227***	-0.5655***	-0.5651***														
								(0.1501)	(0.0965)	(0.0948)														
MOS 0203								0.0799	0.0058	-0.0220														
								(0.0617)	(0.0830)	(0.0857)														
MOS 0204								0.0589	-0.0260	-0.0402														
								(0.0999)	(0.1211)	(0.1224)														
MOS 0206								-0.0375	0.0549	0.0024														
								(0.0812)	(0.0986)	(0.1091)														
MOS 0207								0.0321	0.0418	0.0361														
								(0.0754)	(0.0973)	(0.0983)														
MOS 0402								-0.0331	-0.0664	-0.1063														
								(0.0537)	(0.0716)	(0.0749)														

	Combat Arms Competitive Category					Combat Service Support Competitive Category					Aviation-Ground Competitive Category					Aviation Competitive Category					Law Competitive Category			
Models	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**
Dependent Variable = Selected for Career Designation																								
Independent Variables																								
MOS_0602								-0.0049	0.0275	-0.0059														
								(0.0571)	(0.0732)	(0.0787)														
MOS_1302								-0.0148	-0.0269	-0.0821														
								(0.0621)	(0.0817)	(0.0924)														
MOS_3002								0.0103	-0.0649	-0.0660														
								(0.0608)	(0.0827)	(0.0831)														
MOS_3404								-0.1857**	-0.1750*	-0.1765*														
								(0.0741)	(0.0943)	(0.0947)														
MOS_4302								-0.0502	-0.0089	-0.0031														
								(0.0872)	(0.1131)	(0.1132)														
MOS_4402																								
MOS_5803								-0.0170	-0.0422	-0.0867														
								(0.0732)	(0.0937)	(0.1018)														
MOS_6602													0.1225	0.1997**	0.2122**									
													(0.0827)	(0.0970)	(0.0961)									
MOS_7204													0.1344	0.2422**	0.1334									
													(0.1081)	(0.1022)	(0.1707)									
MOS_7208													-0.0932	0.0730	0.0073									
													(0.0770)	(0.1160)	(0.1299)									
MOS_7210													0.0441	0.2066*	0.1948*									
													(0.0954)	(0.1063)	(0.1105)									
MOS_7220													0.0695	0.2121**	0.2027*									
													(0.0920)	(0.1010)	(0.1061)									
MOS_7507																		-0.4817	0.0000	0.0000				
																		(0.3962)	(0.0000)	(0.0000)				
MOS_7509																		-0.0577	-0.0000	0.0000				
																		(0.0761)	(0.0000)	(0.0000)				
MOS_7556																		-0.1336	0.0000	0.0000				
																		(0.1402)	(0.0000)	(0.0000)				
MOS_7562																		-0.0180	0.0000	0.0000				
																		(0.0556)	(0.0000)	(0.0000)				
MOS_7563																		-0.0761	-0.0000	0.0000				
																		(0.0929)	(0.0001)	(0.0000)				
MOS_7565																		-0.1272	-0.0000	-0.0000				
																		(0.0988)	(0.0002)	(0.0000)				
MOS_7566																		-0.0945	-0.0000	0.0000				
																		(0.0889)	(0.0000)	(0.0000)				
MOS_7568																		-0.6259***	-0.0046	-0.0000				
																		(0.2206)	(0.0182)	(0.0000)				
Performance																								
GCT_TOTAL				0.0034	0.0028				-0.0005	-0.0006				0.0013	0.0009				-0.0000	-0.0000			0.0002	0.0000
				(0.0025)	(0.0025)				(0.0018)	(0.0018)				(0.0039)	(0.0040)				(0.0000)	(0.0000)			(0.0009)	(0.0000)
PFT				0.0013	0.0018				0.0018*	0.0016*				0.0077***	0.0081***				0.0000	0.0000			0.0003	-0.0000
				(0.0015)	(0.0015)				(0.0009)	(0.0009)				(0.0024)	(0.0024)				(0.0000)	(0.0000)			(0.0009)	(0.0000)
CFT				0.0007	-0.0001				0.0046**	0.0048**				0.0092*	0.0078				0.0000	0.0000			0.0015	0.0000
				(0.0034)	(0.0035)				(0.0022)	(0.0022)				(0.0054)	(0.0055)				(0.0000)	(0.0000)			(0.0046)	(0.0000)
Rifle_Sharp				-0.0763	-0.0833				0.0740**	0.0737*				-0.1807*	-0.1889*				-0.0000	-0.0000			0.0119	0.0001
				(0.0544)	(0.0554)				(0.0375)	(0.0377)				(0.0980)	(0.1005)				(0.0001)	(0.0000)			(0.0299)	(0.0007)
Rifle_Marks				-0.0500	-0.0656				0.1983***	0.1948***				0.3484***	0.3567***				-0.0002	-0.0000			-0.7277	-0.8483
				(0.1255)	(0.1254)				(0.0701)	(0.0714)				(0.0655)	(0.0553)				(0.0008)	(0.0002)			(1.4560)	(1.1340)
Rifle_Ung																								

	Combat Arms Competitive Category					Combat Service Support Competitive Category					Aviation-Ground Competitive Category					Aviation Competitive Category					Law Competitive Category			
Models	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**
Dependent Variable = Selected for Career Designation																								
Independent Variables																								
Pistol_Sharp				0.0043	-0.0026				-0.0554	-0.0623*				0.0856	0.0996				-0.0000	-0.0000			-0.0078	-0.0000
				(0.0492)	(0.0498)				(0.0370)	(0.0373)				(0.0818)	(0.0844)				(0.0000)	(0.0000)			(0.0220)	(0.0001)
Pistol_Marks				-0.0736	-0.0951				-0.0747	-0.0696				0.0738	0.0708				0.0000	-0.0000			0.0801	0.0132
				(0.0663)	(0.0681)				(0.0462)	(0.0464)				(0.0993)	(0.1010)				(0.0000)	(0.0000)			(0.1080)	(0.0478)
Water_Unq									0.0035	0.0036														
									(0.2980)	(0.2972)														
Water_Greater				0.3544***	0.3520***				-0.1144	-0.1034				-0.1644	-0.0812				-0.0000	-0.0140				
				(0.0429)	(0.0379)				(0.1417)	(0.1431)				(0.2972)	(0.3002)				(0.0003)	(11.6320)				
Adverse_Rpt				-0.5248***	-0.5341***				-0.5044***	-0.5055***				-0.6401***	-0.6510***				-0.0016	-0.0000			-0.2017	-0.1325
				(0.0910)	(0.0910)				(0.0845)	(0.0830)				(0.0519)	(0.0458)				(0.0087)	(0.0000)			(3.4150)	(0.5635)
RV_Pro_Avg				0.0256*	0.0296**				0.0452***	0.0452***				0.0304	0.0287				0.0000	0.0000			-0.0012	0.0000
				(0.0138)	(0.0140)				(0.0092)	(0.0093)				(0.0215)	(0.0217)				(0.0000)	(0.0000)			(0.0051)	(0.0000)
RV_Pro_Middle				-0.0405	-0.0548				0.1598***	0.1600***				-0.1685	-0.1734				-0.0153	-0.0000			-0.0054	0.0004
				(0.0861)	(0.0868)				(0.0598)	(0.0601)				(0.1442)	(0.1466)				(0.0363)	(0.0000)			(0.0299)	(0.0043)
RV_Pro_Lower				-0.2128	-0.2292				0.2160**	0.2101**				-0.0514	-0.0869				-0.3824	-0.0000			-0.0101	0.0000
				(0.1499)	(0.1511)				(0.0868)	(0.0881)				(0.2641)	(0.2702)				(0.3723)	(0.0001)			(0.1223)	(0.0003)
RV_Cum_Avg				0.0348**	0.0380**				0.0425***	0.0436***				-0.0272	-0.0245				-0.0000	-0.0000			-0.0009	0.0000
				(0.0155)	(0.0157)				(0.0109)	(0.0110)				(0.0255)	(0.0261)				(0.0000)	(0.0000)			(0.0053)	(0.0000)
RV_Cum_Middle				0.0826	0.0821				0.1709**	0.1793***				-0.0111	-0.0258				0.0000	0.0000			-0.0268	-0.0000
				(0.1254)	(0.1309)				(0.0670)	(0.0672)				(0.1645)	(0.1658)				(0.0002)	(0.0000)			(0.0682)	(0.0001)
RV_Cum_Lower				0.1284	0.1327				0.1145	0.1260				-0.3340	-0.2998				0.0000	-0.0000			-0.8553	-0.5463
				(0.1545)	(0.1570)				(0.1004)	(0.0998)				(0.2570)	(0.2699)				(0.0000)	(0.0000)			(0.6184)	(2.3075)
ROPV_Avg				0.0501	0.0511				-0.0517**	-0.0516**				-0.0381	-0.0448				0.0000	-0.0000			0.0071	0.0000
				(0.0694)	(0.0696)				(0.0244)	(0.0247)				(0.0564)	(0.0568)				(0.0000)	(0.0000)			(0.0198)	(0.0000)
ROCV_Avg				0.5617***	0.5657***				0.4784***	0.4821***				0.7068***	0.7528***				0.0000	0.0000			-0.0098	-0.0000
				(0.0941)	(0.0942)				(0.0522)	(0.0527)				(0.1352)	(0.1421)				(0.0000)	(0.0000)			(0.0291)	(0.0000)
Personal_Awards				0.1226***	0.1050***				0.0621***	0.0568***				0.1725***	0.1693***				0.0000	0.0000			0.0036	0.0000
				(0.0251)	(0.0263)				(0.0213)	(0.0217)				(0.0570)	(0.0580)				(0.0000)	(0.0000)			(0.0157)	(0.0000)
Other_Awards				-0.0048	-0.0116				0.0045	0.0002				0.0042	-0.0020				-0.0000	-0.0000			0.0064	0.0000
				(0.0090)	(0.0095)				(0.0057)	(0.0060)				(0.0098)	(0.0107)				(0.0000)	(0.0000)			(0.0172)	(0.0001)
Foreign_Language				-0.0330	-0.0264				0.0047	0.0047				-0.0660**	-0.0656**									
				(0.0264)	(0.0259)				(0.0085)	(0.0086)				(0.0304)	(0.0312)									
Experience																								
Billet_Cmdr					-0.0132					0.0097					0.0167					-0.0005				
					(0.0163)					(0.0113)					(0.0385)					(0.0226)				
Billet_XO					-0.0155					0.0311					0.0805					-0.0000				
					(0.0269)					(0.0268)					(0.0895)					(0.0000)				
Cmbt_Deployment					0.2732***					0.0558					0.0271					-0.0000				-0.0634
					(0.0720)					(0.0416)					(0.0896)					(0.0000)				(0.2547)
Cmbt_Deployment2					0.1768**					0.1262**					0.1298									
					(0.0751)					(0.0523)					(0.1137)									
Cmbt_Deployment3_Plus					0.2298**					0.0929					0.2071									
					(0.1096)					(0.1064)					(0.1397)									
Observations	1,028	1,013	1,013	988	988	1,737	1,719	1,719	1,632	1,632	371	368	368	337	337	556	551	436	399	369	90	90	71	67
Standard errors in parentheses																								
*** Significant at 1%; ** Significant at 5%; *Significant at 10%																								

Figure 20. Model Results for FY12 Round 1 through FY13 Round 2

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APPENDIX P. QUICK REFERENCE ANSWERS TO STUDY RESEARCH QUESTIONS

Combat Arms Competitve Category						
Research Questions	Full Sample			FY12 Round 1 through FY13 Round 2		
	Yes	No	Inconclusive	Yes	No	Inconclusive
Does prior enlisted service increase an officer's likelihood for career designation?	**X**					**X**
Does commissioning source increase an officer's likelihood for selection to career designation?	**X**			**X**		
Does a higher score on physical fitness events such as the PFT and CFT increase an officer's likelihood for career designation?	**X (PFT)**	**X (CFT)**				**X**
Does higher than average performance on FITREPs as graded through reporting senior's and reviewing officer's relative value increase an officer's likelihood for career designation?	**X**			**X**		
Does combat service increase an officer's likelihood for career designation?	**X**			**X**		
Combat Service Support Competitve Category						
Research Questions	Full Sample			FY12 Round 1 through FY13 Round 2		
	Yes	No	Inconclusive	Yes	No	Inconclusive
Does prior enlisted service increase an officer's likelihood for career designation?	**X**					**X**
Does commissioning source increase an officer's likelihood for selection to career designation?	**X**			**X**		
Does a higher score on physical fitness events such as the PFT and CFT increase an officer's likelihood for career designation?	**X (PFT)**		**X (CFT)**	**X**		
Does higher than average performance on FITREPs as graded through reporting senior's and reviewing officer's relative value increase an officer's likelihood for career designation?	**X**			**X**		
Does combat service increase an officer's likelihood for career designation?	**X**			**X**		
Aviation-Ground Competitve Category						
Research Questions	Full Sample			FY12 Round 1 through FY13 Round 2		
	Yes	No	Inconclusive	Yes	No	Inconclusive
Does prior enlisted service increase an officer's likelihood for career designation?	**X**			**X**		
Does commissioning source increase an officer's likelihood for selection to career designation?	**X**			**X**		
Does a higher score on physical fitness events such as the PFT and CFT increase an officer's likelihood for career designation?	**X (PFT)**		**X (CFT)**	**X (PFT)**		**X (CFT)**
Does higher than average performance on FITREPs as graded through reporting senior's and reviewing officer's relative value increase an officer's likelihood for career designation?	**X**			**X**		
Does combat service increase an officer's likelihood for career designation?			**X**			**X**

Law Competitve Category						
Research Questions	Full Sample			FY12 Round 1 through FY13 Round 2		
	Yes	No	Inconclusive	Yes	No	Inconclusive
Does prior enlisted service increase an officer's likelihood for career designation?			X			X
Does commissioning source increase an officer's likelihood for selection to career designation?			X			X
Does a higher score on physical fitness events such as the PFT and CFT increase an officer's likelihood for career designation?			X			X
Does higher than average performance on FITREPs as graded through reporting senior's and reviewing officer's relative value increase an officer's likelihood for career designation?			X			X
Does combat service increase an officer's likelihood for career designation?			X			X
Aviation Competitve Category						
Research Questions	Full Sample			FY12 Round 1 through FY13 Round 2		
	Yes	No	Inconclusive	Yes	No	Inconclusive
Does prior enlisted service increase an officer's likelihood for career designation?			X			X
Does commissioning source increase an officer's likelihood for selection to career designation?			X			X
Does a higher score on physical fitness events such as the PFT and CFT increase an officer's likelihood for career designation?			X			X
Does higher than average performance on FITREPs as graded through reporting senior's and reviewing officer's relative value increase an officer's likelihood for career designation?			X			X
Does combat service increase an officer's likelihood for career designation?			X			X

Figure 21. Quick Reference Answers to Study Research Questions

APPENDIX Q. COMBAT SERVICE SUPPORT INTERACTIVE SELECTION COUNSELING MODELS

CSS Competitive Category Interactive Model using FY12Rd1 through FY13Rd2 Dataset				
Demographics	**Input Value**		MOS 4302 (1 if Yes, 0 if No)	**0**
Number of Dependents	**0.9**		MOS 5803 (1 if Yes, 0 if No)	**0**
Years of Commissioned Service	**3.07**		***Performance***	
Years of Total Service	**5.8**		GCT Score	**122**
Not Prior Enlisted (1 if Yes, 0 if No)	**1**		PFT Score	**276**
Prior Enlisted (1 if Yes, 0 if No)(O-2E, O-3E, or ENLPGM Commissioning Source)	**0**		CFT Score	**295**
Male (1 if Yes, 0 if No)	**1**		Rifle Expert (1 if Yes, 0 if No)	**1**
Female (1 if Yes, 0 if No)	**0**		Rifle Sharpshooter (1 if Yes, 0 if No)	**0**
White (1 if Yes, 0 if No)	**1**		Rifle Marksman (1 if Yes, 0 if No)	**0**
Black (1 if Yes, 0 if No)	**0**		Pistol Expert (1 if Yes, 0 if No)	**1**
Hispanic (1 if Yes, 0 if No)	**0**		Pistol Sharpshooter (1 if Yes, 0 if No)	**0**
Other Race (1 if Yes, 0 if No)	**0**		Pistol Marksman (1 if Yes, 0 if No)	**0**
Single (1 if Yes, 0 if No)	**1**		Water Qualified (1 if Yes, 0 if No)	**1**
Married (1 if Yes, 0 if No)	**0**		Water Greater (1 if Yes, 0 if No)	**0**
College Degree (1 if Yes, 0 if No)	**1**		No Adverse FITREP (1 if Yes, 0 if No)	**1**
Master's, Doctorate, or Higher than College Degree (1 if Yes, 0 if No)	**0**		Adverse FITREP (1 if Yes, 0 if No)	**0**
High School Diploma (1 if Yes, 0 if No)	**0**		Relative Value "At Processing" Average of Averages	**93.57**
Commissioning			RV "At Processing" Avg in Upper Third (93.34-100)	**1**
United States Naval Academy (1 if Yes, 0 if No)	**1**		RV "At Processing" Avg in Middle Third (86.67-93.33)	**0**
Enlisted to Officer Program (1 if Yes, 0 if No)	**0**		RV "At Processing" Avg in Lower Third (80-86.66)	**0**
NROTC (1 if Yes, 0 if No)	**0**		Relative Value "Cumulative" Average of Averages	**91.82**
OCC (1 if Yes, 0 if No)	**0**		RV "Cumulative" Avg in Upper Third (93.34-100)	**1**
PLC (1 if Yes, 0 if No)	**0**		RV "Cumulative" Avg in Middle Third (86.67-93.33)	**0**
MOS			RV "Cumulative" Avg in Lower Third (80-86.66)	**0**
MOS 0180 (1 if Yes, 0 if No)	**1**		ROPV Average of Averages	**0.669**
MOS 0202 (1 if Yes, 0 if No)	**0**		ROCV Average of Averages	**0.206**
MOS 0203 (1 if Yes, 0 if No)	**0**		Number of Personal Awards	**1.16**
MOS 0204 (1 if Yes, 0 if No)	**0**		Fireign Language Tested (DLPT)	**0**
MOS 0206 (1 if Yes, 0 if No)	**0**		***Experience***	
MOS 0207 (1 if Yes, 0 if No)	**0**		Number of Observed FITREPs with Commander, Cmdr, or CO in Billet Description	**1.35**
MOS 0402 (1 if Yes, 0 if No)	**0**		Number of Observed FITREPs with Executive Officer or XO in Billet Description	**0.28**
MOS 0602 (1 if Yes, 0 if No)	**0**		0 Combat Deplyments (1 if Yes, 0 if No)	**1**
MOS 1302 (1 if Yes, 0 if No)	**0**		1 Combat Deplyment (1 if Yes, 0 if No)	**0**
MOS 3002 (1 if Yes, 0 if No)	**0**		2 Combat Deployments (1 if Yes, 0 if No)	**0**
MOS 3404 (1 if Yes, 0 if No)	**0**		3-Plus Combat Deployments (1 if Yes, 0 if No)	**0**
Average Selection Percentage for CSS MOS at Average Values	**57.14%**		**YOUR Predicted Probability of Selection**	**57.14%**

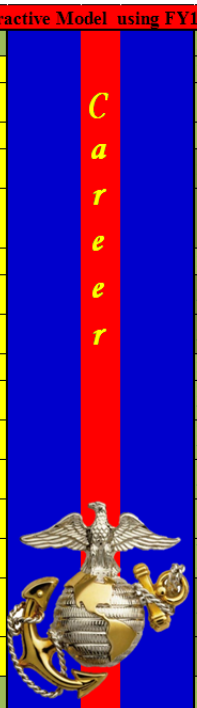


Figure 22. Combat Service Support Interactive Selection Counseling Model

CSS Competitive Category Interactive Model using FY12Rd1 through FY13Rd2 Dataset					
Demographics	**Input Value**			MOS 4302 (1 if Yes, 0 if No)	**0**
Number of Dependents	*1*			MOS 5803 (1 if Yes, 0 if No)	**0**
Years of Commissioned Service	**3.07**			***Performance***	
Years of Total Service	**5.8**			GCT Score	**122**
Not Prior Enlisted (1 if Yes, 0 if No)	**1**			PFT Score	***290***
Prior Enlisted (1 if Yes, 0 if No)(O-2E, O-3E, or ENLPGM Commissioning Source)	**0**			CFT Score	**295**
Male (1 if Yes, 0 if No)	**1**			Rifle Expert (1 if Yes, 0 if No)	**1**
Female (1 if Yes, 0 if No)	**0**			Rifle Sharpshooter (1 if Yes, 0 if No)	**0**
White (1 if Yes, 0 if No)	**1**			Rifle Marksman (1 if Yes, 0 if No)	**0**
Black (1 if Yes, 0 if No)	**0**			Pistol Expert (1 if Yes, 0 if No)	**1**
Hispanic (1 if Yes, 0 if No)	**0**			Pistol Sharpshooter (1 if Yes, 0 if No)	**0**
Other Race (1 if Yes, 0 if No)	**0**			Pistol Marksman (1 if Yes, 0 if No)	**0**
Single (1 if Yes, 0 if No)	**1**			Water Qualified (1 if Yes, 0 if No)	**1**
Married (1 if Yes, 0 if No)	**0**			Water Greater (1 if Yes, 0 if No)	**0**
College Degree (1 if Yes, 0 if No)	**1**			No Adverse FITREP (1 if Yes, 0 if No)	**1**
Master's, Doctorate, or Higher than College Degree (1 if Yes, 0 if No)	**0**			Adverse FITREP (1 if Yes, 0 if No)	**0**
High School Diploma (1 if Yes, 0 if No)	**0**			Relative Value "At Processing" Average of Averages	***93***
Commissioning				RV "At Processing" Avg in Upper Third (93.34-100)	**1**
United States Naval Academy (1 if Yes, 0 if No)	**0**			RV "At Processing" Avg in Middle Third (86.67-93.33)	**0**
Enlisted to Officer Program (1 if Yes, 0 if No)	**0**			RV "At Processing" Avg in Lower Third (80-86.66)	**0**
NROTC (1 if Yes, 0 if No)	**0**			Relative Value "Cumulative" Average of Averages	***93***
OCC (1 if Yes, 0 if No)	**1**			RV "Cumulative" Avg in Upper Third (93.34-100)	**1**
PLC (1 if Yes, 0 if No)	**0**			RV "Cumulative" Avg in Middle Third (86.67-93.33)	**0**
MOS				RV "Cumulative" Avg in Lower Third (80-86.66)	**0**
MOS 0180 (1 if Yes, 0 if No)	**1**			ROPV Average of Averages	**0.669**
MOS 0202 (1 if Yes, 0 if No)	**0**			ROCV Average of Averages	**0.206**
MOS 0203 (1 if Yes, 0 if No)	**0**			Number of Personal Awards	***1***
MOS 0204 (1 if Yes, 0 if No)	**0**			Fireign Language Tested (DLPT)	**0**
MOS 0206 (1 if Yes, 0 if No)	**0**			***Experience***	
MOS 0207 (1 if Yes, 0 if No)	**0**			Number of Observed FITREPs with Commander, Cmdr, or CO in Billet Description	***2***
MOS 0402 (1 if Yes, 0 if No)	**0**			Number of Observed FITREPs with Executive Officer or XO in Billet Description	***1***
MOS 0602 (1 if Yes, 0 if No)	**0**			0 Combat Deplyments (1 if Yes, 0 if No)	**0**
MOS 1302 (1 if Yes, 0 if No)	**0**			1 Combat Deplyment (1 if Yes, 0 if No)	**0**
MOS 3002 (1 if Yes, 0 if No)	**0**			2 Combat Deployments (1 if Yes, 0 if No)	***1***
MOS 3404 (1 if Yes, 0 if No)	**0**			3-Plus Combat Deployments (1 if Yes, 0 if No)	**0**
Average Selection Percentage for CSS MOS at Average Values	**57.14%**			**YOUR Predicted Probability of Selection**	**93.29%**

Figure 23. Combat Service Support Interactive Selection Counseling Model with Different Characteristics

APPENDIX R. AVIATION-GROUND INTERACTIVE SELECTION COUNSELING MODELS

Air-Grnd Competitive Category Interactive Model using FY12Rd1 through FY13Rd2 Dataset				
Demographics	**Input Value**			**Input Value**
Number of Dependents	1.13		PFT Score	276
Years of Commissioned Service	3.11		CFT Score	295
Years of Total Service	6.44		Rifle Expert (1 if Yes, 0 if No)	1
Not Prior Enlisted (1 if Yes, 0 if No)	1		Rifle Sharpshooter (1 if Yes, 0 if No)	0
Prior Enlisted (1 if Yes, 0 if No)(O-2E, O-3E, or ENLPGM Commissioning Source)	0		Rifle Marksman (1 if Yes, 0 if No)	0
Male (1 if Yes, 0 if No)	1		Pistol Expert (1 if Yes, 0 if No)	1
Female (1 if Yes, 0 if No)	0		Pistol Sharpshooter (1 if Yes, 0 if No)	0
White (1 if Yes, 0 if No)	1		Pistol Marksman (1 if Yes, 0 if No)	0
Black (1 if Yes, 0 if No)	0		Water Qualified (1 if Yes, 0 if No)	1
Hispanic (1 if Yes, 0 if No)	0		Water Greater (1 if Yes, 0 if No)	0
Other Race (1 if Yes, 0 if No)	0		No Adverse FITREP (1 if Yes, 0 if No)	1
Single (1 if Yes, 0 if No)	1		Adverse FITREP (1 if Yes, 0 if No)	0
Married (1 if Yes, 0 if No)	0		Relative Value "At Processing" Average of Averages	92.99
College Degree (1 if Yes, 0 if No)	1		RV "At Processing" Avg in Upper Third (93.34-100)	1
Master's, Doctorate, or Higher than College Degree (1 if Yes, 0 if No)	0		RV "At Processing" Avg in Middle Third (86.67-93.33)	0
High School Diploma (1 if Yes, 0 if No)	0		RV "At Processing" Avg in Lower Third (80-86.66)	0
Commissioning			Relative Value "Cumulative" Average of Averages	91.29
United States Naval Academy (1 if Yes, 0 if No)	1		RV "Cumulative" Avg in Upper Third (93.34-100)	1
Enlisted to Officer Program (1 if Yes, 0 if No)	0		RV "Cumulative" Avg in Middle Third (86.67-93.33)	0
NROTC (1 if Yes, 0 if No)	0		RV "Cumulative" Avg in Lower Third (80-86.66)	0
OCC (1 if Yes, 0 if No)	0		ROPV Average of Averages	0.703
PLC (1 if Yes, 0 if No)	0		ROCV Average of Averages	0.13
MOS			Number of Personal Awards	0.94
MOS 6002 (1 if Yes, 0 if No)	1		Fireign Language Tested (DLPT)	0
MOS 6602 (1 if Yes, 0 if No)	0		***Experience***	
MOS 7204 (1 if Yes, 0 if No)	0		Number of Observed FITREPs with Commander, Cmdr, or CO in Billet Description	0.74
MOS 7208 (1 if Yes, 0 if No)	0		Number of Observed FITREPs with Executive Officer or XO in Billet Description	0.11
MOS 7210 (1 if Yes, 0 if No)	0		0 Combat Deplyments (1 if Yes, 0 if No)	1
MOS 7220 (1 if Yes, 0 if No)	0		1 Combat Deplyment (1 if Yes, 0 if No)	0
Performance			2 Combat Deployments (1 if Yes, 0 if No)	0
GCT Score	121		3-Plus Combat Deployments (1 if Yes, 0 if No)	0
Average Selection Percentage for Air-Ground MOS at Average Values	65.32%		**YOUR Predicted Probability of Selection**	65.32%

Figure 24. Aviation-Ground Interactive Selection Counseling Model

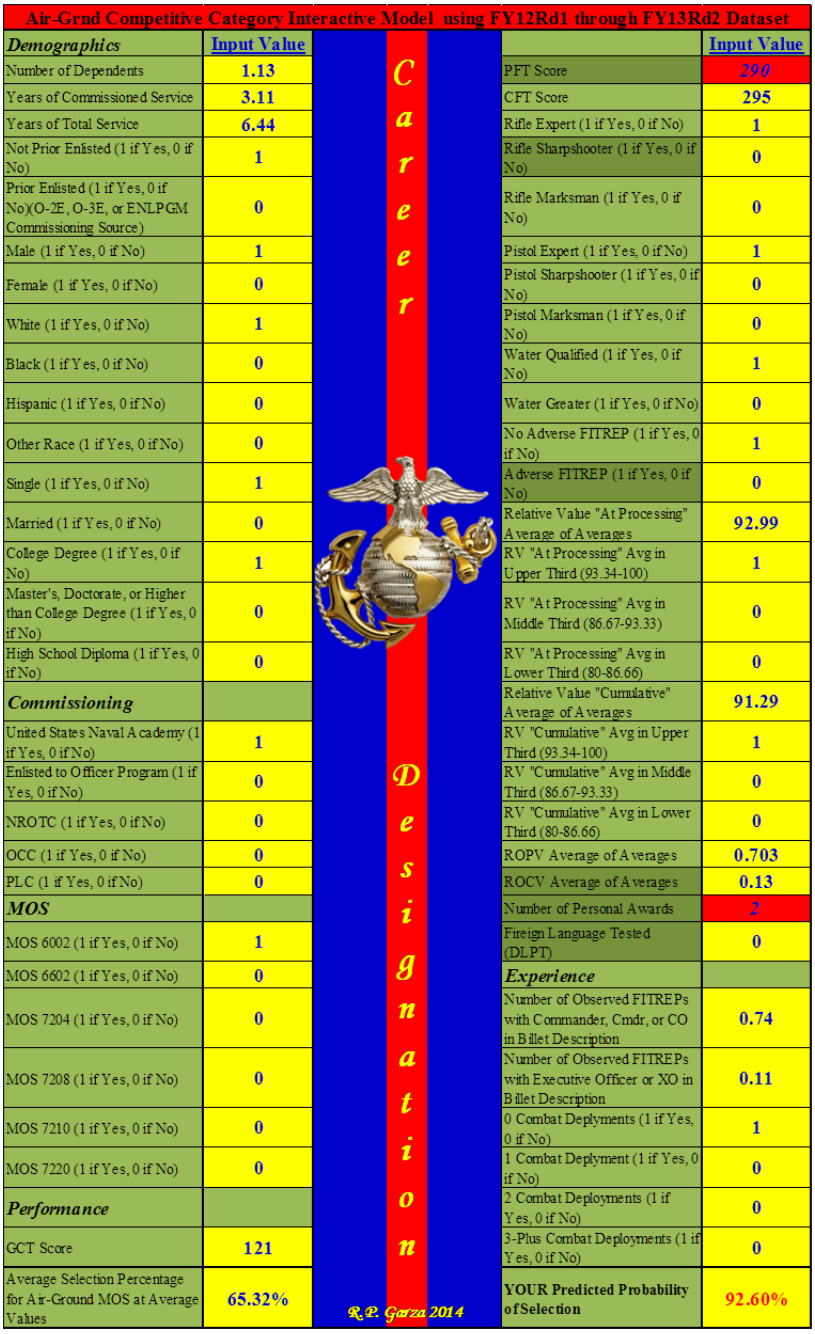
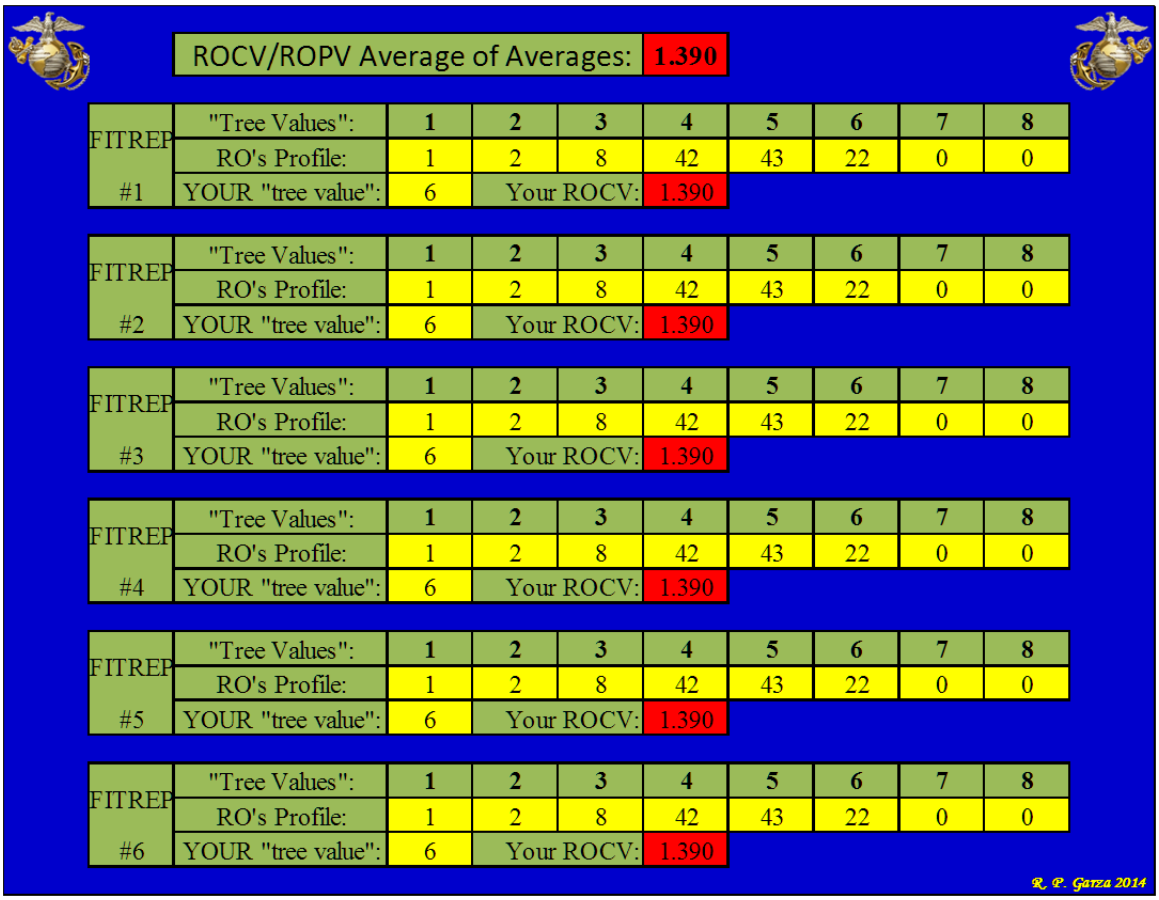


Figure 25. Aviation-Ground Interactive Selection Counseling Model with Different Characteristics

APPENDIX S. ROCV AND ROPV CALCULATOR



ROCV/ROPV Average of Averages: **1.390**

FITREP #1	"Tree Values":	1	2	3	4	5	6	7	8
	RO's Profile:	1	2	8	42	43	22	0	0
	YOUR "tree value":	6	Your ROCV:		1.390				

FITREP #2	"Tree Values":	1	2	3	4	5	6	7	8
	RO's Profile:	1	2	8	42	43	22	0	0
	YOUR "tree value":	6	Your ROCV:		1.390				

FITREP #3	"Tree Values":	1	2	3	4	5	6	7	8
	RO's Profile:	1	2	8	42	43	22	0	0
	YOUR "tree value":	6	Your ROCV:		1.390				

FITREP #4	"Tree Values":	1	2	3	4	5	6	7	8
	RO's Profile:	1	2	8	42	43	22	0	0
	YOUR "tree value":	6	Your ROCV:		1.390				

FITREP #5	"Tree Values":	1	2	3	4	5	6	7	8
	RO's Profile:	1	2	8	42	43	22	0	0
	YOUR "tree value":	6	Your ROCV:		1.390				

FITREP #6	"Tree Values":	1	2	3	4	5	6	7	8
	RO's Profile:	1	2	8	42	43	22	0	0
	YOUR "tree value":	6	Your ROCV:		1.390				

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Figure 26. ROCV and ROPV Calculator

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